

# 149

Letting January 19, 2024

## Notice to Bidders, Specifications and Proposal



**Contract No. 61H98  
WILL County  
Section 18-00084-00-WR (Lockport)  
Route FAP 351 (II 7)  
Project QJVK-783 ()  
District 1 Construction Funds**

Prepared by

F

Checked by



- 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. January 19, 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. 61H98  
WILL County  
Section 18-00084-00-WR (Lockport)  
Project QJVK-783 ()  
Route FAP 351 (II 7)  
District 1 Construction Funds**

**Pavement widening and reconstruction, storm sewer, sidewalk replacement, curb & gutter replacement, concrete box culvert, pavement markings, traffic signals, and water main replacement on IL 7 from Lincoln Street to Summit Drive in Lockport.**

- 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

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)

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## 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.

<u>File Name</u>	<u>Pg.</u>	<input type="checkbox"/>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80099	246	<input checked="" type="checkbox"/>	Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2022
80274	248	<input checked="" type="checkbox"/>	Aggregate Subgrade Improvement	April 1, 2012	April 1, 2022
80192		<input type="checkbox"/>	Automated Flagger Assistance Device	Jan. 1, 2008	April 1, 2023
80173	251	<input checked="" type="checkbox"/>	Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80426		<input type="checkbox"/>	Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	Jan. 1, 2022
80241		<input type="checkbox"/>	Bridge Demolition Debris	July 1, 2009	
50531		<input type="checkbox"/>	Building Removal	Sept. 1, 1990	Aug. 1, 2022
50261		<input type="checkbox"/>	Building Removal with Asbestos Abatement	Sept. 1, 1990	Aug. 1, 2022
* 80449	253	<input checked="" type="checkbox"/>	Cement, Type II	Aug. 1, 2023	
80384	254	<input checked="" type="checkbox"/>	Compensable Delay Costs	June 2, 2017	April 1, 2019
80198		<input type="checkbox"/>	Completion Date (via calendar days)	April 1, 2008	
80199		<input type="checkbox"/>	Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80453		<input type="checkbox"/>	Concrete Sealer	Nov. 1, 2023	
80261	258	<input checked="" type="checkbox"/>	Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
80434		<input type="checkbox"/>	Corrugated Plastic Pipe (Culvert and Storm Sewer)	Jan. 1, 2021	
80029	261	<input checked="" type="checkbox"/>	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
80229		<input type="checkbox"/>	Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
80452		<input type="checkbox"/>	Full Lane Sealant Waterproofing System	Nov. 1, 2023	
80447		<input type="checkbox"/>	Grading and Shaping Ditches	Jan 1, 2023	
80433		<input type="checkbox"/>	Green Preformed Thermoplastic Pavement Markings	Jan. 1, 2021	Jan. 1, 2022
80443		<input type="checkbox"/>	High Tension Cable Median Barrier Removal	April 1, 2022	
* 80456	271	<input checked="" type="checkbox"/>	Hot-Mix Asphalt	Jan. 1, 2024	
80446	272	<input checked="" type="checkbox"/>	Hot-Mix Asphalt – Longitudinal Joint Sealant	Nov. 1, 2022	Aug. 1, 2023
80438		<input type="checkbox"/>	Illinois Works Apprenticeship Initiative – State Funded Contracts	June 2, 2021	Sept. 2, 2021
80045		<input type="checkbox"/>	Material Transfer Device	June 15, 1999	Jan. 1, 2022
80450		<input type="checkbox"/>	Mechanically Stabilized Earth Retaining Walls	Aug. 1, 2023	
80441	274	<input checked="" type="checkbox"/>	Performance Graded Asphalt Binder	Jan 1, 2023	
80451	279	<input checked="" type="checkbox"/>	Portland Cement Concrete	Aug. 1, 2023	
34261		<input type="checkbox"/>	Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2022
* 80455	280	<input checked="" type="checkbox"/>	Removal and Disposal of Regulated Substances	Jan. 1, 2024	
80445	282	<input checked="" type="checkbox"/>	Seeding	Nov. 1, 2022	
80448	288	<input checked="" type="checkbox"/>	Source of Supply and Quality Requirements	Jan. 2, 2023	
80340		<input type="checkbox"/>	Speed Display Trailer	April 2, 2014	Jan. 1, 2022
80127		<input type="checkbox"/>	Steel Cost Adjustment	April 2, 2014	Jan. 1, 2022
80397	289	<input checked="" type="checkbox"/>	Subcontractor and DBE Payment Reporting	April 2, 2018	
80391	290	<input checked="" type="checkbox"/>	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
* 80437	291	<input checked="" type="checkbox"/>	Submission of Payroll Records	April 1, 2021	Nov. 2, 2023
80435		<input type="checkbox"/>	Surface Testing of Pavements – IRI	Jan. 1, 2021	Jan. 1, 2023
80410		<input type="checkbox"/>	Traffic Spotters	Jan. 1, 2019	
20338	293	<input checked="" type="checkbox"/>	Training Special Provisions	Oct. 15, 1975	Sept. 2, 2021
80429		<input type="checkbox"/>	Ultra-Thin Bonded Wearing Course	April 1, 2020	Jan. 1, 2022
80439	296	<input checked="" type="checkbox"/>	Vehicle and Equipment Warning Lights	Nov. 1, 2021	Nov. 1, 2022
80302	297	<input checked="" type="checkbox"/>	Weekly DBE Trucking Reports	June 2, 2012	Nov. 1, 2021
80454		<input type="checkbox"/>	Wood Sign Support	Nov. 1, 2023	
80427	298	<input checked="" type="checkbox"/>	Work Zone Traffic Control Devices	Mar. 2, 2020	
80071		<input type="checkbox"/>	Working Days	Jan. 1, 2002	

## GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET

Effective as of the: August 4, 2023 Letting

Pg #	√	File Name	Title	Effective	Revised
	<input type="checkbox"/>	GBSP 4	Polymer Modified Portland Cement Mortar	June 7, 1994	April 1, 2016
	<input type="checkbox"/>	GBSP 13	High-Load Multi-Rotational Bearings	Oct 13, 1988	Sept 2, 2022
	<input type="checkbox"/>	GBSP 14	Jack and Remove Existing Bearings	April 20, 1994	April 13, 2018
	<input type="checkbox"/>	GBSP 16	Jacking Existing Superstructure	Jan 11, 1993	April 13, 2018
	<input type="checkbox"/>	GBSP 18	Modular Expansion Joint	May 19, 1994	Dec 9, 2022
	<input type="checkbox"/>	GBSP 21	Cleaning and Painting Contact Surface Areas of Existing Steel Structures	June 30, 2003	Oct 23, 2020
	<input type="checkbox"/>	GBSP 25	Cleaning and Painting Existing Steel Structures	Oct 2, 2001	April 15, 2022
	<input type="checkbox"/>	GBSP 26	Containment and Disposal of Lead Paint Cleaning Residues	Oct 2, 2001	Apr 22, 2016
	<input type="checkbox"/>	GBSP 28	Deck Slab Repair	May 15, 1995	April 13, 2018
	<input type="checkbox"/>	GBSP 29	Bridge Deck Microsilica Concrete Overlay	May 15, 1995	April 30, 2021
	<input type="checkbox"/>	GBSP 30	Bridge Deck Latex Concrete Overlay	May 15, 1995	April 30, 2021
	<input type="checkbox"/>	GBSP 31	Bridge Deck High-Reactivity Metakaolin (HRM) Conc Overlay	Jan 21, 2000	April 30, 2021
	<input type="checkbox"/>	GBSP 33	Pedestrian Truss Superstructure	Jan 13, 1998	Dec 9, 2022
	<input type="checkbox"/>	GBSP 34	Concrete Wearing Surface	June 23, 1994	Oct 4, 2016
	<input type="checkbox"/>	GBSP 45	Bridge Deck Thin Polymer Overlay	May 7, 1997	Feb 6, 2013
	<input type="checkbox"/>	GBSP 53	Structural Repair of Concrete	Mar 15, 2006	Aug 9, 2019
	<input type="checkbox"/>	GBSP 55	Erection of Curved Steel Structures	June 1, 2007	
	<input type="checkbox"/>	GBSP 59	Diamond Grinding and Surface Testing Bridge Sections	Dec 6, 2004	April 15, 2022
	<input type="checkbox"/>	GBSP 60	Containment and Disposal of Non-Lead Paint Cleaning Residues	Nov 25, 2004	Apr 22, 2016
	<input type="checkbox"/>	GBSP 61	Slipform Parapet	June 1, 2007	April 15, 2022
	<input type="checkbox"/>	GBSP 67	Structural Assessment Reports for Contractor's Means and Methods	Mar 6, 2009	Oct 5, 2015
	<input type="checkbox"/>	GBSP 71	Aggregate Column Ground Improvement	Jan 15, 2009	Oct 15, 2011
	<input type="checkbox"/>	GBSP 72	Bridge Deck Fly Ash or GGBF Slag Concrete Overlay	Jan 18, 2011	April 30, 2021
	<input type="checkbox"/>	GBSP 78	Bridge Deck Construction	Oct 22, 2013	Dec 21, 2016
	<input type="checkbox"/>	GBSP 79	Bridge Deck Grooving (Longitudinal)	Dec 29, 2014	Mar 29, 2017
300	<input checked="" type="checkbox"/>	GBSP 81	Membrane Waterproofing for Buried Structures	Oct 4, 2016	March 1, 2019
	<input type="checkbox"/>	GBSP 82	Metallizing of Structural Steel	Oct 4, 2016	Oct 20, 2017
	<input type="checkbox"/>	*GBSP 83	Hot Dip Galvanizing for Structural Steel	Oct 4, 2016	March 24, 2023
	<input type="checkbox"/>	GBSP 85	Micropiles	Apr 19, 1996	Oct 23, 2020
	<input type="checkbox"/>	GBSP 86	Drilled Shafts	Oct 5, 2015	Oct 4, 2016
	<input type="checkbox"/>	GBSP 87	Lightweight Cellular Concrete Fill	Nov 11, 2011	Apr 1, 2016
	<input type="checkbox"/>	GBSP 88	Corrugated Structural Plate Structures	Apr 22, 2016	April 13, 2018
	<input type="checkbox"/>	*GBSP 89	Preformed Pavement Joint Seal	Oct 4, 2016	March 24, 2023
	<input type="checkbox"/>	*GBSP 90	Three Sided Precast Concrete Structure (Special)	Dec 21, 2016	March 24, 2023
	<input type="checkbox"/>	*GBSP 91	Crosshole Sonic Logging Testing of Drilled Shafts	Apr 20, 2016	March 24, 2023
	<input type="checkbox"/>	*GBSP 92	Thermal Integrity Profile Testing of Drilled Shafts	Apr 20, 2016	March 24, 2023
	<input type="checkbox"/>	*GBSP 93	Preformed Bridge Joint Seal	Dec 21, 2016	March 24, 2023
	<input type="checkbox"/>	GBSP 94	Warranty for Cleaning and Painting Steel Structures	Mar 3, 2000	Nov 24, 2004
	<input type="checkbox"/>	GBSP 96	Erection of Bridge Girders Over or Adjacent to Railroads	Aug 9, 2019	
	<input type="checkbox"/>	GBSP 97	Folded/Formed PVC Pipeliner	April 15, 2022	
	<input type="checkbox"/>	GBSP 98	Cured-in-Place Pipe Liner	April 15, 2022	
	<input type="checkbox"/>	GBSP 99	Spray-Applied Pipe Liner	April 15, 2022	
	<input type="checkbox"/>	GBSP 100	Bar Splicers	Sept 2, 2022	Dec 9, 2022
	<input type="checkbox"/>	GBSP 101	Noise Abatement Wall, Ground Wall	Dec 9, 2022	
	<input type="checkbox"/>	GBSP 102	Noise Abatement Wall, Structure Mounted	Dec 9, 2022	
	<input type="checkbox"/>	GBSP 103	Noise Abatement Wall Anchor Rod Assembly	Dec 9, 2022	

An \* indicates a new or revised special provision.

### **SPECIAL PROVISIONS**

The “Standard Specifications for Road and Bridge Construction” adopted January 1, 2022, as amended by the Supplemental Specifications and Recurring Special Provisions, adopted January 1, 2024; the Bureau of Design and Environment (BDE) Special Provisions indicated on the respective Check Sheets herein, the latest edition of the “Manual on Uniform Traffic Control Devices”, “Manual of Test Procedures”, and the “Manual for Materials Inspection,” adopted April, 29, 2022, all issued by the State of Illinois Department of Transportation, hereinafter referred to as the “Standard Specifications”, and the “Standard Specification for Water & Sewer Main Construction in Illinois”, Eighth Edition, 2020 are hereby incorporated by reference and shall apply to and govern the construction of the IL Route 7 (E. 9<sup>th</sup> Street) Widening and Resurfacing Project, Section No.18-00084-00-WR, in Lockport, Will County, Illinois.

The following SPECIAL PROVISIONS supplement the STANDARD SPECIFICATIONS shall apply to and govern the construction of IL Route 7 (E. 9<sup>th</sup> Street) Widening and Resurfacing Project, Contract No. 61H98, Section No. 18-00084-00-WR, Project No. QJVK(783), Job No. C-91-078-21 in the City of Lockport, Will County, Illinois. In case of conflict with any part or parts of said specifications, said SPECIAL PROVISIONS shall take precedence and shall govern.

### **LOCATION OF IMPROVEMENT**

Illinois Route 7 (East 9<sup>th</sup> Street) is located in the City of Lockport, Will County. The improvement on Illinois Route 7 begins 240’ west of the centerline of Lincoln Avenue and ends 478’ northeast of the centerline of Summit Drive. The total net and gross length of the improvement on Illinois Route 7 (FAP 351) is 4,051 feet (0.77 mi.) in length.

### **DESCRIPTION OF IMPROVEMENT**

The work consists of HMA surface removal and resurfacing, pavement widening, portions of pavement reconstruction, combination concrete curb and gutter installation, new drainage structures and storm sewer, water main installation and water main appurtenances, removal and replacement of the roadway traffic signals, ditch regrading, landscaping, sidewalk replacement with ADA improvements, as well as all incidental and collateral work necessary to complete the project as shown on the plans and as described herein.

### **ADJACENT WORK**

Please note that IDOT Contract Number 62N51 is located on IL Route 7 adjacent to this project. 62N51 is Currently in Phase III (Construction) and should be (substantially) completed in CY 2023. The Bureau of Design was aware of the City plans for 61H98. Both contract limits have coordinated. No conflicts are anticipated between the two projects.



**MAINTENANCE OF ROADWAYS (D-1)**

Effective: September 30, 1985

Revised: November 1, 1996

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

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

**PUBLIC CONVENIENCE AND SAFETY (D-1)**

Effective: May 1, 2012

Revised: July 15, 2012

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

“If the holiday is on a Saturday or Sunday, and is legally observed on a Friday or Monday, the length of Holiday Period for Monday or Friday shall apply.”

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

“The Length of Holiday Period for Thanksgiving shall be from 5:00 AM the Wednesday prior to 11:59 PM the Sunday After”

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

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

**COMPLETION DATE PLUS WORKING DAYS (D-1)**

Effective: September 30, 1985

Revised: January 1, 2007

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

"When a completion date plus working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on **July 25, 2025**, except as specified herein.

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

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

**STATUS OF UTILITIES (D-1)**

Effective: June 1, 2016

Revised: January 1, 2020

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

**UTILITIES TO BE ADJUSTED**

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

**Pre-Stage**

<b>STAGE / LOCATION</b>	<b>TYPE</b>	<b>DESCRIPTION</b>	<b>RESPONSIBLE AGENCY</b>	<b>DURATION OF TIME</b>
IL Route 7 Sta. 47+85 to 48+65 22' LT	Underground Telephone Duct	Existing AT&T duct to be lowered to avoid conflict with proposed storm sewer.	AT&T	5 Days
IL Route 7 Sta. 49+02 to 49+82 24' to 45' LT	Underground Telephone Duct	Existing AT&T duct to be relocated/lowered to facilitate box culvert construction. Existing duct to be removed by AT&T.	AT&T	10 Days
IL Route 7 Sta. 50+94 to 59+62 22' LT	Underground Telephone Duct	Existing AT&T duct to be lowered to avoid conflict with proposed storm sewer.	AT&T	5 Days
IL Route 7 Sta. 39+17 40' LT	Aerial Facilities	Existing AT&T aerial lines moved from old pole to relocated ComEd pole. Existing pole to be removed by AT&T.	AT&T	5 Days
IL Route 7 Sta. 50+77 46' RT	Aerial Facilities	Existing AT&T aerial lines moved from old pole to relocated ComEd pole. Existing pole to be removed by AT&T.	AT&T	5 Days

IL Route 7 Sta. 51+69 48' RT	Aerial Facilities	Existing AT&T aerial lines moved from old pole to relocated ComEd pole. Existing pole to be removed by AT&T.	AT&T	5 Days
IL Route 7 Sta. 49+52 to 49+56 48' RT	Fiber Optic Cable	Fiber cable to adjusted to facilitate sewer installation	AT&T	10 Days

**Stage 1**

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
IL Route 7 Sta. 50+90 24' LT	AT&T Manhole	Adjust existing manhole to proposed finished grade.	AT&T	0.5 Days
IL Route 7 Sta. 47+86 to 48+26 20' LT	Fiber Optic Cable	Fiber cable to be lowered to facilitate storm sewer construction.	MCI-Verizon	0.5 Days

**Stage 3**

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
IL Route 7 Sta. 35+63 26' LT	AT&T Manhole	Adjust existing manhole to proposed finished grade.	AT&T	0.5 Days
IL Route 7 Sta. 43+42 26' LT	AT&T Manhole	Adjust existing manhole to proposed finished grade.	AT&T	0.5 Days
IL Route 7 Sta. 51+90 45' RT	Fiber Optic Cable	Fiber cable to be adjusted to facilitate traffic signal installation.	MCI-Verizon	1 Days
IL Route 7 Sta. 53+55 to 53+75 45' RT	Fiber Optic Cable	Fiber cable to be lowered to facilitate box culvert installation.	MCI-Verizon	1 Days

Pre-Stage: 45 Days Total Installation  
 Stage 1: 1 Days Total Installation  
 Stage 2: 0 Days Total Installation  
 Stage 3: 3 Days Total Installation

**UTILITIES TO BE WATCHED AND PROTECTED**

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

**Pre-Stage**

No facilities requiring extra consideration.

**Stage 3**

<b>STAGE / LOCATION</b>	<b>TYPE</b>	<b>DESCRIPTION</b>	<b>OWNER</b>
IL Route 7 Sta. 40+38 37' RT	Fiber Optic Cable	Watch and protect existing fiber cable and handhole during sidewalk installation.	MCI-Verizon
IL Route 7 Sta. 45+41 45' RT	Fiber Optic Cable	Watch and protect existing fiber cable during storm sewer installation. Existing cable at approx. 48" depth.	MCI-Verizon
IL Route 7 Sta. 46+98 24' LT	Underground Telephone Duct	Watch and protect existing underground duct during installation of storm sewer and inlet (S323 and P322).	AT&T
IL Route 7 Sta. 47+35 30' to 44' RT	Fiber Optic Cable	Watch and protect existing fiber cable during water main installation. Existing cable at approx. 48" depth.	MCI-Verizon
IL Route 7 Sta. 47+35 30' RT	Fiber Optic Cable	Watch and protect existing fiber cable during storm sewer installation. Existing cable at approx. 48" depth.	MCI-Verizon
IL Route 7 Sta. 49+52 51' LT	Fiber Optic Cable	Watch and protect existing fiber cable during traffic signal installation. Existing cable at approx. 28" depth.	MCI-Verizon
IL Route 7 Sta. 51+05 37' RT	Fiber Optic Cable	Watch and protect existing fiber cable during storm sewer installation. Existing cable at approx. 180" depth.	MCI-Verizon
IL Route 7 Sta. 54+60 37' RT	Fiber Optic Cable	Watch and protect existing fiber cable during storm sewer installation. Existing cable at approx. 36" depth.	MCI-Verizon
IL Route 7 Sta. 55+85 40' RT	Fiber Optic Cable	Watch and protect existing fiber cable during storm sewer installation. Existing cable at approx. 60" depth.	MCI-Verizon
IL Route 7 Sta. 55+85 40' RT	Fiber Optic Cable	Watch and protect existing fiber cable during storm sewer installation. Existing cable at approx. 60" depth.	MCI-Verizon

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IL Route 7 Sta. 64+24 37' RT	Fiber Optic Cable	Watch and protect existing fiber cable during storm sewer installation. Existing cable at approx. 72" depth.	MCI-Verizon
IL Route 7 Sta. 65+16 to 68+29 40' RT	Fiber Optic Cable	Watch and protect existing fiber cable during storm sewer and PRESSURE REDUCING VALVE VAULT installation. Existing cable at approx. 32"-120" depth.	MCI-Verizon
IL Route 7 Sta. 70+05 to 70+50 40' RT	Fiber Optic Cable	Watch and protect existing fiber cable during water main installation. Existing cable at approx. 48" depth.	MCI-Verizon
IL Route 7 Sta. 31+70 to 37+00	4" Gas Main	Existing 4" gas main was relocated from the north parkway to south parkway. Existing main was removed/abandoned to facilitate storm sewer installation.	Nicor
IL Route 7 Sta. 51+00 to 60+25	4" Gas Main	Existing 4" gas main was relocated from the north parkway to south parkway. Existing main was removed/abandoned to facilitate storm sewer/culvert installation.	Nicor
IL Route 7 Sta. 39+17 40' LT	Utility Pole	Existing utility pole at Sta. 39+17 has been relocated to Sta. 39+13 to avoid conflicts with proposed work. Existing pole to be removed by AT&T when relocations are complete.	ComEd
IL Route 7 Sta. 50+77 46' RT	Utility Pole	Existing utility pole at Sta. 50+77 has been relocated to Sta. 50+55 to avoid conflicts with proposed work. Existing pole to be removed by AT&T when relocations are complete.	ComEd
IL Route 7 Sta. 51+69 48' RT	Utility Pole	Existing utility pole at Sta. 51+69 has been relocated to Sta. 51+86 to avoid conflicts with proposed work. Existing pole to be removed by AT&T when relocations are complete.	ComEd
IL Route 7 Sta. 39+17 40' LT	Aerial Facilities	Existing Comcast aerial lines moved from old pole to relocated ComEd pole.	Comcast
IL Route 7 Sta. 50+77 46' RT	Aerial Facilities	Existing Comcast aerial lines moved from old pole to relocated ComEd pole.	Comcast
IL Route 7 Sta. 51+69 48' RT	Aerial Facilities	Existing Comcast aerial lines moved from old pole to relocated ComEd pole.	Comcast

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

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	E-mail address
AT&T (Distribution)	Steve Pesola	630-573-5703	<a href="mailto:sp9653@att.com">sp9653@att.com</a>
Comcast	Axel Perez	773-851-8613	<a href="mailto:Axel_Perez@cable.comcast.com">Axel_Perez@cable.comcast.com</a>

ComEd	Anthony Urbina	312-763-2198 ext.2091	<a href="mailto:anthony.urbina@comed.com">anthony.urbina@comed.com</a>
MCI – Verizon	Jason Jarvis	219-314-6926	<a href="mailto:jason.jarvis@Verizon.com">jason.jarvis@Verizon.com</a>
Nicor Gas	Charles “Chip” Parrot	630-388-3319	<a href="mailto:cparrot@southernco.com">cparrot@southernco.com</a>

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

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

The estimated relocation duration must be part of the progress schedule submitted by the contractor. A utility kickoff meeting will be scheduled between the Department, the Department’s contractor, and the utility companies when necessary. The Department’s contractor is responsible for contacting J.U.L.I.E. prior to all excavation work.

**VANDALISM**

Special attention is called to Article 107.30 of the STANDARD SPECIFICATIONS. Any defaced work shall be corrected or replaced by the CONTRACTOR at his sole expense prior to final payment. The CITY shall cooperate with the CONTRACTOR to minimize vandalism, but the CONTRACTOR shall be ultimately responsible to correct any damage.

**STREET CLEANING**

Special attention shall be paid to Section 107.15 of the STANDARD SPECIFICATIONS. If the CONTRACTOR fails to clean the pavement, sidewalk or parkways on or adjacent to the section under construction to the satisfaction of the City at any time during the contract, the ENGINEER will notify the CONTRACTOR at which time the CONTRACTOR will have 24 hours to respond.

The CONTRACTOR shall contract to have these streets swept each week during construction.

This work shall be included in the cost of PAVEMENT REMOVAL.

**FAILURE TO COMPLETE PLANT CARE AND ESTABLISHMENT WORK ON TIME**

Should the Contractor fail to complete the plant care and/or supplemental watering work as per the standard specifications or within 36 hours notification from the Engineer, or within such extended times as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of:

- \$50.00 per tree/per day

- \$40.00 per large shrub/per day
- \$35.00 per small shrub/per day
- \$20.00 per vine/per day
- \$20.00 per perennial/per day
- \$20.00 per sq yd sod/per day

not as penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

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

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

### **MAILBOX RELOCATION**

The CONTRACTOR shall remove and relocate all mailboxes and mailbox posts located in or near the construction zone as directed by the CITY. The CONTRACTOR shall be responsible for replacing at his expense any mailboxes or mailbox posts damaged during the course of construction and the operation of removing and relocating any mailboxes or mailbox posts. The removal and relocation of all existing mailboxes or mailbox posts within the construction limits shall not be paid for separately but shall be included in the cost of the contract.

### **EMBANKMENT II (D1)**

Effective: March 1, 2011

Revised: November 1, 2013

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

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

### **CONSTRUCTION REQUIREMENTS**

**Samples.** Embankment material shall be sampled and tested before use. The contractor shall identify embankment sources, and provide equipment as the Engineer requires, for the collection of



samples from those sources. Samples will be furnished to the Geotechnical Engineer a minimum of three weeks prior to use in order that laboratory tests for compaction can be performed. Embankment material placement cannot begin until tests are completed.

**Placing Material.** In addition to Article 202.03, broken concrete, reclaimed asphalt with no expansive aggregate, or uncontaminated dirt and sand generated from construction or demolition activities shall be placed in 6 inches (150 mm) lifts and disked with the underlying lift until a uniform homogenous material is formed. This process also applies to the overlaying lifts. The disk must have a minimum blade diameter of 24 inches (600 mm).

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

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

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

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

**Stability.** The requirement for embankment stability in article 205.04 will be measured with a Dynamic Cone Penetrometer (DCP) according to the test method in the IDOT Geotechnical Manual. The penetration rate must be equal or less than 1.5 inches (38 mm) per blow.

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

### **TREE REMOVAL**

**Description.** This work shall be completed in accordance with Section 201 of the Standards specifications except as modified herein.

Trees three (3) inches in diameter at breast height shall not be cleared from April 1<sup>st</sup> through October 31<sup>st</sup> of any given year. Contractor shall be responsible for scheduling tree removal work in accordance with this requirement and no additional compensation shall be allowed.

**Basis of Payment.** Tree removal will be paid for at the contract unit price per unit diameter for TREE REMOVAL (6 TO 15 UNITS DIAMETER).

**ARTICULATED CONCRETE BLOCK REVETMENT MAP**

**Description.** This work consists of furnishing and installing an articulated concrete block revetment system at the lines, grades and locations shown on the Plans. This work shall be performed in accordance with the applicable portions of Section 285 of the Standard Specifications, as modified herein, and applicable industry standards including, but not limited to, ASTM D 6884, *Standard Practice for Installation of Articulating Concrete Block (ACB) Revetment Systems*.

**Materials.** Articulated concrete block revetment mat shall consist of open concrete blocks (unless otherwise noted on the Plans) interconnected with flexible cable to provide articulation and flexibility between adjacent blocks. The revetment system shall be produced in conformance to ASTM D 6684, *Standard Specification for Materials and Manufacture of Articulating Concrete Block (ACB) Revetment Systems*, and tested in accordance with ASTM D 7277, *Standard Test Method for Performance Testing of Articulating Concrete Block (ACB) Revetment Systems for Hydraulic Stability in Open Channel Flow*. Performance criteria shall be considered valid only when accompanied by evidence of analysis in accordance with ASTM D 7276, *Standard Guide for Analysis and Interpretation of Test Data for Articulating Concrete Block (ACB) Revetment Systems in Open Channel Flow*.

The selected blocks shall meet the bed shear requirements in accordance with Table 1, based on independent third party test data, and tested in accordance with ASTM D 7277.

**Table 1. BED SHEAR REQUIREMENTS**

Type	Minimum Product Permissible Bed Shear Stress (lb/ft <sup>2</sup> )
1	5
2	15
3	20

Individual units in the system shall be staggered and interlocked for enhanced stability. The open cell units shall have two (2) vertical openings of rectangular cross section with sufficient wall thickness to resist cracking during shipping and installation. The open cell units shall have an open area of 18-25% as measured from the base of the mat. The closed cell units shall have an open area of 7-15% as measured from the base of the mat. In addition, for closed cell blocks the approximate dimensions shall be a minimum 15.5-inches long x 15.5-inches wide x 4.5-inches high and the minimum weight shall be approximately 70 pounds per block.

Parallel strands of cable shall extend through a minimum of two (2) cable ducts in each block allowing for longitudinal binding of the units within a mat. Each row of units shall be laterally offset by one-half of a block width from the adjacent row so that any given block is cabled to four other blocks. Half-blocks, if used, are always closed cell units and need not be specified separately as such.

Each block shall incorporate interlocking surfaces that minimize lateral displacement of the blocks within the mats when they are lifted by the longitudinal revetment cables. The interlocking surfaces must not protrude beyond the perimeter of the blocks to such an extent that they reduce the flexibility or articulation capability of the ACB mats or become damaged or broken when the mats are lifted during shipment or placement.

At the time of delivery to the work site, the ACB units shall conform to the physical requirements prescribed in Table 2.

**Table 2. PHYSICAL REQUIREMENTS**

<b>Minimum Compressive Strength (lb/in<sup>2</sup>)</b>		<b>Maximum Water Absorption (lb/ft<sup>3</sup>)</b>	
Average of 3 units	Individual Unit	Average of 3 units	Individual Unit
4,000	3,500	9.1	11.7

Units shall be sampled and tested in accordance with ASTM D 6684.

Cracks exceeding 0.25 inches in width and/or 1.0 inch in depth shall be deemed grounds for rejection. Chipping resulting in a weight loss exceeding 10% of the average weight of a concrete unit shall be deemed grounds for rejection. Blocks rejected prior to delivery from the point of manufacture shall be replaced at the manufacturer's expense. Blocks rejected at the job site shall be repaired with structural grout or replaced upon request at the expense of the Contractor.

All units shall be sound and free of defects which would interfere with the proper placement of the unit, or which would impair the performance of the system. Surface cracks incidental to the usual methods of manufacture, or surface chipping resulting from customary methods of handling in shipment and delivery, shall not be deemed grounds for rejection.

Filter fabric shall be per Section 1080.03 of the Standard Specifications, nonwoven with a grab tensile strength of 160 lbs (for open cell blocks) and 200 lbs (for closed cell blocks).

Revetment Cable and Fittings:

Option 1. Polyester Revetment Cable and Fittings: Revetment cable shall be constructed of high tenacity, low elongating, and continuous filament polyester fibers. Cable shall consist of a core construction comprised of parallel fibers contained within an outer jacket or cover. The size of the revetment cable shall be selected such that the minimum acceptable strength is at least five (5) times that required for lifting of the mats, in accordance with ASTM D 6684 paragraph 5.5.2.

Elongation requirements are based upon stabilized new, dry cable. Stabilization refers to a process in which the cable is cycled fifty (50) times between a load corresponding to  $200 \cdot D^2$  (where D is defined as the cable cross-sectional area) and a load equal to 10%, 20% or 30% of

the cable's approximate average breaking strength. Relevant elongation values are as shown in Table 3. The tolerance on these values is + 5%.

**Table 3. ELASTIC ELONGATION REQUIREMENTS  
 at Percentage of Break Strength**

10%	20%	30%
0.6	1.4	2.2

The revetment cable shall exhibit resistance to most concentrated acids, alkalis and solvents. Cable shall be impervious to rot, mildew and degradation associated with marine organisms. The materials used in the construction of the cable shall not be affected by continuous immersion in fresh or salt water.

Option 2. Galvanized Steel Revetment Cable and Fittings: Revetment cable shall be constructed of preformed galvanized aircraft cable (GAC). The cables shall be made from individual wires and strands that have been formed during the manufacture into the shape they have in finished cable.

Cable shall consist of a core construction comprised of seven (7) wires wrapped within seven (7) or nineteen (19) wire strands. The size of the revetment cable shall be selected such that the minimum acceptable strength is at least five (5) times that required for lifting of the mats.

The revetment cable shall exhibit resistance to mild concentrations of acids, alkalis, and solvents. Fittings such as sleeves and stops shall be aluminum, and the washers shall be galvanized steel or plastic. Furthermore, depending on material availability, the cable type (7x7 or 7x19) can be interchanged while always ensuring the required factor of safety for the cable.

Hand placed interlocking blocks are also acceptable.

**Submittals:**

The Contractor shall furnish acceptable evidence of inspection for all material used with this item. Certifications from the manufacturer shall accompany all shipments of material to the project site. Submittal of certifications and/or evidence of inspection shall be necessary before payment is made for this item.

The Contractor shall furnish manufacturer's certificates of compliance for blocks/mats, revetment cable, geotextile, and any revetment cable fittings and connectors. The Contractor shall also furnish the manufacturer's specifications, literature, preliminary shop drawings for the layout of the mats, installation and safety instructions, and any recommendations, if applicable, that are specifically related to the project and submitted to the construction manager for approval.

**General Requirements.** Field installation shall be consistent with the way the system was installed in preparation for hydraulic testing pursuant to ASTM D 7277.

Prior to beginning construction of this item, the Contractor shall submit to the Engineer a written

plan for revetment system construction, which addresses the following:

1. Site preparation
2. Details of filter fabric and concrete revetment blocks
3. Types and locations of revetment system anchors
4. Filter fabric and revetment system installation details
5. Methods for maintaining drainage and providing erosion control at the work site, and
6. Schedule of activities where the presence of manufacturer's representative is required.

The plan shall indicate its acceptance by the manufacturer's representative. No work shall begin until the plan has been reviewed and deemed acceptable by the Engineer. Once accepted, changes to the plan must be submitted in writing to the Engineer for acceptance.

All subgrade preparation shall be performed in accordance with ASTM D 6884.

The slope shall be graded to a smooth plane surface to ensure that intimate contact is achieved between the slope face and the geotextile (filter fabric), and between the geotextile and the entire bottom surface of the individual blocks. All slope deformities, roots, grade stakes, and stones which project normal to the local slope face must be re-graded or removed. No holes, "pockmarks", slope board teeth marks, footprints, or other voids greater than 0.5 inch in depth normal to the local slope face shall be permitted. No grooves or depressions greater than 0.5 inches in depth normal to the local slope face with a dimension exceeding 1.0 foot in any direction shall be permitted. Where such areas are evident, they shall be brought to grade by placing compacted homogeneous material. The slope and slope face shall be uniformly compacted, and the depth of layers, homogeneity of soil, and amount of compaction shall be as required by the Engineer.

Excavation and preparation for all termination trenches or aprons shall be done in accordance to the lines, grades and dimensions shown in the Contract Drawings. The termination trench hinge-point at the top of the slope shall be uniformly graded so that no dips or bumps greater than 0.5 inches over or under the local grade occur. The width of the termination trench hinge-point shall also be graded uniformly to assure intimate contact between all ACBs and the underlying grade at the hinge-point.

After the subgrade has been prepared, the filter fabric shall be placed in accordance with the manufacturer's recommendations.

The articulated concrete block revetment system shall be installed in accordance with the accepted written plan for construction, and to the lines and grades shown on the Plans. The top of the installed concrete blocks shall match the surface elevations indicated on the Plans. If recommended by the revetment manufacturer, revetment mat anchors, of the type and size recommended by the manufacturer's representative, shall be furnished and installed at locations determined by the representative.

Excavation and backfilling required for the placement of revetment, as well as to bury the ends of the revetment system, shall be performed per the recommendations of the revetment manufacturer, and to the satisfaction of the Engineer.

Seams over two (2) inches wide between mats and joints, created where openings in the mats are required to accommodate passage of pipes, headwalls, inlets, manholes or other facilities, shall be filled completely with a suitable colloidal permeable concrete grout, as recommended by the manufacturer and to the satisfaction of the Engineer. The size of the joint between concrete revetment mats and the above-noted facilities shall be held to a minimum. Additional open or closed cell concrete blocks shall be used (see type specified on the Plans), as recommended by the revetment manufacturer, to reduce the size of the opening between the mat and the facility to be accommodated.

Once the mats are in place, the interlocking surfaces shall minimize the lateral displacement of the blocks even if the cables should become damaged or removed. The mats must be able to flex a minimum of 18° between any given row or column of blocks in the uplift direction and 45° in the downward direction.

The cables inserted into the mats shall form lifting loops at one end of the mat with the corresponding cable ends spliced together to form a lifting loop at the other end of the mat. The Engineer shall approve appropriate sleeves for use in order to splice the lifting loop. The cables shall be inserted after sufficient time has been allowed for the concrete to complete the curing process.

The open cell revetment system shall be backfilled with topsoil and promptly sodded/seeded and fertilized per the landscaping plans, in order to establish vegetation in the open cells of the revetment mat. Openings between the closed cell precast blocks shall be backfilled with CA-11.

**Method of Measurement.** This work will be measured in place, and the area computed in square yards. The area of measurement will include the complete installed mats, including both the visible area and the buried edge portions of the installation, which are not visible upon project completion (the "edge terminations"), in accordance with applicable standards including ASTM D 6884.

Earthwork required to bring the general area of the concrete revetment to the proposed lines and grades shown on the Plans will be measured for payment as established in the contract for EARTH EXCAVATION. Earthwork required to inlay the concrete revetment mats will be considered included in the cost of ARTICULATED CONCRETE BLOCK REVETMENT MAT.

Topsoil excavation and placement will be measured for payment as established in the contract for REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL and TOPSOIL FURNISH AND PLACE, 6". Sodding/seeding, fertilizing and related items will be measured for payment as established in the contract for these respective pay items.

**Basis of Payment.** This work will be paid at the contract unit price per square yard for ARTICULATED CONCRETE BLOCK REVETMENT MAT which payment shall constitute full compensation for inlay excavation and backfill (excluding topsoil), preparation of subgrade, filter fabric, concrete block revetment mat, mat anchors (if required), and grout, and for all labor, equipment, tools and incidentals necessary to complete the work as specified.

### **DETECTABLE WARNINGS**

**Description.** This work shall consist of installing detectable warnings at locations as indicated on the plans in accordance with section 424 of the standard specifications except as modified herein.

**Materials.** The Contractor shall install an ADA tactile plate that is approved by IDOT. The detectable warning shall be installed in accordance with the manufacturer's recommendations and specifications as required by the Engineer. ADA tactile plates shall be cast iron or steel as follows:

**Construction Requirements.** Articles 424.08 – 424.12 of the Standard Specifications shall be replaced with the following:

**424.08 Curb Ramps.** Curb ramps shall be constructed according to the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Illinois Accessibility Code, and as shown on the plans. Curb ramps shall be constructed to the same thickness as the adjacent sidewalk with a minimum thickness of 5 inches.

**424.09 Detectable Warnings.** The detectable warning shall be installed during the construction of the Portland Cement Concrete sidewalk. The top of the tile shall be flush with the surface of the sidewalk. All PCC sidewalk and aggregate subbase installed below the detectable warning shall be considered included in the cost of PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH. The detectable warning shall be installed according to the manufacturer's specifications.

The detectable warnings shall be installed at curb ramps, medians and pedestrian refuge islands, at-grade railroad crossings, transit platform edges, and other locations where pedestrians are required to cross a hazardous vehicular way. Detectable warnings shall also be installed at alleys and commercial entrances when permanent traffic control devices are present. The installation shall be an integral part of the walking surface and only the actual domes shall project above the walking surface. The product or method used for installing detectable warnings shall come with the following documents which shall be given to the Engineer prior to use.

- A. Product Data: Submit manufacturer's literature describing products, installation procedures and routine maintenance. Samples for Verification Purposes: Submit two (2) tile samples minimum 6"x6" of the kind proposed for use.
- B. Shop drawings are required for products specified showing fabrication details, composite structural system, tile surface profile, fastener and anchor locations, plans of tile placement including joints, and material to be used as well as outlining installation materials and procedure.
- C. Material Test Reports: Submit complete test reports from qualified accredited independent testing laboratories to qualify that materials proposed for use are in compliance with

requirements and meet or exceed the properties indicated on the specifications. All tests shall be conducted on a Replaceable Cast In Place Detectable Tactile Warning Surface Tile system as certified by a qualified independent testing laboratory and be current within a 24 month period.

- D. Maintenance Instructions: Submit copies of manufacturer's specified installation and maintenance practices for each type of Detectable Warning Surface Tile and accessory as required.
- E. Manufacturer's five year warranty.

**424.11 Disposal of Surplus Material.** Surplus or waste material shall be disposed of according to Article 202.03.

**Method of Measurement and Basis of Payment.** This work will be measured and paid for at the contract unit price per square foot of DETECTABLE WARNINGS which price shall include all materials, labor, and equipment necessary to perform the work as shown in the construction detail and specified herein. The detectable warnings shall be measured for payment in place and the area shall be computed in square feet.



### **DUCTILE IRON WATER MAIN**

**Description.** The Contractor shall furnish and install the proposed water main of the diameter specified at the locations shown on the plans or as directed by the City. The water main shall include excavation, granular bedding, installation of the Polyethylene encasement wrapped water main, testing and chlorination of the water main, backfill and compaction of the trench and all related items required for a complete and operational water main.

**Materials.** Water main pipe, unless otherwise specified shall be of the following materials:

Lining - Cement - Mortar lined ductile iron pipe conforming to the requirements of A.N.S.I. specification A.21.4 (AWWA C-104 - Class 52).

Coating – The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179, with a minimum mass of 200 g/m<sup>2</sup> of pipe surface area. The zinc 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." A standard finishing layer of asphaltic coating shall be applied to protect the zinc coating in accordance with AWWA C-151.

Water main Joints - Sections of water main pipe shall be connected by means of push-on joints, consisting of bells cast integrally with the pipe, which have interior angular recesses conforming to the shape and dimension of a rubber sealing gasket. The interior dimension shall admit the insertion of the spigot end of the joining pipe in a manner that will compress the gasket tightly between the bell of the pipe and the inserted spigot, thus securing the gasket and sealing the joint. Such push-on joints shall be of the following makes, conforming to the requirements of A.N.S.I. - A.21.51 (AWWA C-151).

- (1) Super Belltite - as supplied by Clow Corporation.
- (2) Fastite - as supplied by American Cast Iron Pipe Co.
- (3) Tyton - as supplied by the U.S. Pipe and Foundry Co.

The lubricant used in conjunction with the push-on joints shall be of material that is recommended by the suppliers specified above, or an acceptable commercially processed animal fat or vegetable shortening

Fasteners - All below grade fasteners shall be stainless steel Type 304.

All materials shall meet the "Buy American" provision of the American Recovery and Reinvestment Act of 2009.

### **Construction Methods**

The water main shall be installed as detailed on the plans and in accordance with the applicable provisions of the Standard Specifications for Water and Sewer Main Construction in Illinois, current edition. The water main shall be installed to the grades shown on the plans and shall have a nominal minimum depth of cover of five feet, six inches (5'-6"). The excavation for the water main shall be

made using trench equipment or other suitable excavating equipment.

Ductile iron pipe, pipe fittings, and valve bodies, as well as cast iron valve boxes, shall be wrapped with a layer of Polyethylene encasement, a minimum of 8 mils in thickness each. The entire wrap on any pipe or fitting shall have a single seam secured by waterproof tape. Polyethylene shall overlap a minimum of 24 inches at seams. The wrap shall enclose the entire pipe or fitting and shall be secured to the adjoining pipe barrel by waterproof tape tightened securely around the juncture of the wrap and the pipe barrel. The Contractor shall re-wrap the water main at all service tap locations. All polyethylene wrapped ductile iron pipe, pipe fittings and valve bodies shall be inspected by the Engineer.

A canvas strap shall be used to lower the water main into the trench to avoid damaging the Polyethylene encasement.

Granular bedding shall be placed along the entire length of all water mains from four (4) inches below the water main to 6" above the water main. Material shall be gradation CA-7 course aggregate. The bedding material shall be included in the cost of DUCTILE IRON WATER MAIN.

If the excavation has been made deeper than necessary, the water main shall be laid at the lower depth, and no additional cost shall be charged to the Village for the extra excavation, trench backfill, or for subsequent adjustments to fire hydrants, valve vaults or domestic water services. All excavated materials not needed for backfilling the trenches shall be disposed of by the Contractor off site and shall not be stored on site.

All trenches within areas of proposed pavement or where shown on the plans shall be backfilled with select granular trench backfill to a point not less than five (5) feet from the outside edges of existing and proposed paved surfaces.

Non-pavement areas shall be backfilled from the top of the water main with originally excavated material free from rocks, frozen material or large clods and shall be carefully placed and compacted to prevent damage to or the dislodging of the water main pipe.

Backfilling shall be performed in accordance to Section 20 of the Standard Specifications for Water and Sewer Main Construction in Illinois, current edition. After the installation of the granular bedding the final backfill shall be deposited in uniform lifts not exceeding 12 inch in depth, loose measurement, and each lift shall be compacted by mechanical means to the satisfaction of the Engineer.

Where possible, the water main must be laid at least 10 feet horizontally from any sewer. In the event this is not possible, less than 10 feet is permissible provided the water main invert is at least 18 inches above the crown of the sewer in a separate trench or on a shelf of undisturbed earth in the same trench.

Where proper clearance, as described above, is not possible to obtain, the sewer must be of ductile iron or PVC-SDR-21 pipe pressure tested to the maximum expected surcharge head to assure water tightness before backfilling.

Where a water main must cross a sanitary service or sewer, the invert of the water main shall be a minimum of 18 inches above the crown of the sewer for at least 10 feet each side of the crossing.

Where proper vertical separation is not obtainable or the water main must pass under a sewer, the sewer must be of ductile iron or PVC-SDR-21 pipe or PVC-SDR-21 casing pipe for a minimum distance of 10 feet each side of the crossing. In making such crossing, a length of water main pipe shall be centered over the sewer so that the joints will be equidistant from the sewer. Casing spacers shall be used to slide the pipe into and support the pipe inside the carrier pipe. The blowing of sand or pea gravel into the pipe is not required with the use of casing spacers. The ends of the casing pipe shall be grouted closed with concrete or as directed by the Engineer. Wood skids are not approved. Where the water main must cross under a sewer, a vertical separation of 18 inches must be maintained between the pipes, along with the means to support larger sized sewer lines to prevent their settling and breaking the water main.

Separation from sewers shall conform to Sections 41-2.01 of the Standard Specifications for Water and Sewer Main Construction in Illinois, current edition.

Water in the trench shall be removed during pipe laying and jointing operations. Provisions shall be made to prevent floating of the pipe. Trench water shall not be allowed to enter the pipe at any time.

Adequate provisions shall be made for safely storing and protecting all water pipe prior to the actual installation in the trench. Care shall be taken to prevent damage to the pipe castings, both inside and out. Provisions shall be made to keep the inside of the pipe clean throughout its storage period and to keep mud and/or debris from being deposited therein. All pipe shall be thoroughly cleaned on the inside before laying.

Proper equipment shall be used for the safe handling, conveying, and laying of the pipe. All pipes shall be carefully lowered into the trench, piece by piece, by means of suitable tools or equipment, in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main material be dropped or dumped into the trench.

The pipe shall be inspected for defects. All lumps, blisters, and excess coal tar coating shall be removed from the ends of each pipe and the inside of the bell.

When connecting joints, all portions of the joining materials and the socket and spigot ends of the joining pipe shall be wiped clean of all foreign materials. The actual assembly of the joint shall be in accordance with the manufacturer's installation instructions. During the construction and until joining operations are complete, the open ends of all pipes shall be at all times protected and sealed with temporary water tight plugs.

The entire section of the pipe shall be pushed forward to seat the spigot end into the bell. After the section of pipe is inserted into the bell (when joining pipe to mechanical joint fittings) the gasket shall then be pressed into place within the bell, being careful to have the gasket evenly located around the entire joint.

**Measurement and Payment.** This work will be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN, of the diameter specified, measured in place. This price shall include the cost of all pipe, pipe fittings, joint materials, zinc coating, polyethylene encasement, restraint devices and thrust blocks, Field-Lock gaskets, hydrostatic pressure tests, leakage tests, disinfecting of the water main, excavation, bedding and select (common) backfill. All trench backfill, pavement removal and replacement and other surface restoration items as shown on the plans and specified herein shall be paid for separately. Granular Cradle (CA-7) from four inches (4") below the bottom of the pipe to six inches (6") above the top of the pipe will not be measured for payment but shall be considered as included in the contract unit price per linear foot of ductile iron pipe water main of the class and size specified.

This item shall also include any and all incidental items such as temporary plugs, corporation stops (for testing), water pumps, gauges, meters and laboratory test costs, and all other items necessary to complete this work as specified.

### **WATER MAIN FITTINGS**

**Description.** The Contractor shall furnish and install ductile iron fittings to connect water main pipe as shown on the plans, described in this Special Provision and in accordance with the Standard Specifications for Water and Sewer Main Construction in Illinois, current edition.

**Materials.** Fittings shall be compact, ductile iron with mechanical joints rated 250 psi per AWWA C153/ANSI 21.53 (Clow, Tyler, American, or U.S. Pipe).

**Coating** – The exterior of all fittings shall be coated with a layer of arc-sprayed zinc per ISO 8179, with a minimum mass of 200 g/m<sup>2</sup> of pipe surface area. A standard finishing layer of asphaltic coating shall be applied to protect the zinc coating in accordance with AWWA C-151.

**Fasteners** - All below grade fasteners shall be stainless steel Type 304.

All materials shall meet the "Buy American" provision of the American Recovery and Reinvestment Act of 2009.

**Construction Methods.** All bends of 11 1/4 degrees or greater and all tees and plugs shall be thrust protected to prevent movement of the lines under pressure. Thrust protection at bends, tees, solid sleeves, caps, valves and hydrants shall be done through the use of Mega Lugs Mechanical Joint Restraints by EPPA Iron.

Thrust blocking at bends, tees, caps, valves and hydrants using Portland Cement Concrete shall only be allowed with the approval of the Engineer. A minimum of 12 inches of Portland Cement Concrete shall be placed between solid ground and the fittings, and shall be anchored in such a manner that pipe and fitting joints will be accessible for repair. Thrust block installation shall be in accordance with Section 41-2.10 of the Standard Specifications for Water and Sewer Main Construction in Illinois, current edition and as shown in the City of Lockport Standard Detail No. 60-5.

Testing and disinfecting of fittings shall be as specified elsewhere herein.

This work will not be paid for separately but shall be included in the contract unit price per linear foot of DUCTILE IRON WATER MAIN of the class and size specified which price shall be payment in full for all labor, equipment, and material, testing and disinfecting, to complete the work as specified herein.

### **PRESSURE TESTING OF WATER MAINS**

**Description.** After the pipe has been laid and partially backfilled as specified herein, all newly-laid pipe valved sections and fire hydrants, unless otherwise expressly specified, be subjected to a hydrostatic pressure of 150 psi at the lowest elevation of the pipe section. The Engineer shall be given 24 hours notice prior to the beginning of testing. The duration of each pressure test shall be not less than two hours. Water main testing shall be in accordance with the applicable portions of AWWA Standards C600 and C603, or as otherwise modified herein.

The water main shall be tested in segments (i.e., not the entire project length at once) to minimize water service disruption. Length of test segments to be determined by the Engineer.

**Procedure for Test.** The Contractor shall notify the City at least twenty-four hours prior to the pressure test. Valves will be turned on only under the supervision of the City, and the City will witness all pressure testing.

Each section of pipe to be tested, as determined by the Engineer, shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump pipe connection and all necessary apparatus, including gauges and meters, shall be furnished by the Contractor. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevations and afterwards tightly plugged. Any cracked or defective pipes, fittings, valves, or hydrants discovered in consequence of this pressure test shall be removed and replaced by the Contractor with sound material, and test shall be repeated until satisfactory to the Engineer and the City. The provisions of AWWA C600 and C603, where applicable, shall apply.

The pressure testing shall be accomplished with fire hydrant auxiliary valves open.

**Leakage Test.** After completion of the pressure test, a leakage test shall be conducted to determine the quantity of water lost by leakage under the specified test pressure.

1. Test pressure is defined as the maximum operating pressure of the section under test, and is based on the elevation of the lowest point in the line or section under test corrected to the elevation of the test gauge. Applicable provisions of AWWA C600 and C603 shall apply. The minimum duration of each leakage test shall be one (1) hour in addition to the pressure test period.
2. Allowable leakage in gallons per hour for cast iron water main shall not be greater than that determined by the following formula:  
  
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$$L = \frac{ND \sqrt{P}}{7400}$$

Note: L = Allowable leakage in gallons per hour  
N = Number of joints in length of pipeline tested.  
D = Nominal diameter of the pipe in inches.  
P = Average test pressure during leakage test in pounds per square inch gauge.

3. Leakage is defined as the quantity of water to be supplied in the newly laid pipe or any valved section under test, which is necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.

Immediately after a passed test the pressure shall be drained through a fire hydrant until it is below the potable system pressure.

**Method of Measurement and Basis of Payment.** This work shall not be measured separately and shall be included in the bid price for the water main installation.

### **DISINFECTION OF WATER MAINS**

**Description.** Disinfection of water mains shall be completed in accordance with Section 41-2.14 of the Water and Sewer Specifications except as modified in this Special Provision.

The Owner shall be notified at least twenty-four hours before the disinfection procedure. Representatives of the Public Works Department must be present during the procedure.

**Flushing.** Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. If no hydrant is installed at the end of the main, then a tap should be provided large enough to develop a velocity of at least two and five-tenths (2.5) feet per second in the main. One two and one-half (2 1/2) inch hydrant opening will, under normal pressures, provide this velocity in pipe sized up to and including twelve (12) inches.

All taps required for chlorination or flushing purposes, or for temporary or permanent release of air, shall be provided for by the Contractor as part of the construction of water mains.

**Requirement of Chlorine.** A free chlorine residual of at least 50 ppm and no more than 400 ppm must be reached throughout the entire length and branch lines of the water main. After the super-chlorinated water has sat in the main for twenty-four hours, a chlorine residual test shall be taken to insure the residual has not dropped by over one-half.

**Form of Applied Chlorine.** Chlorine shall be applied by the method which follows, subject to the review of the Engineer.

Chlorination shall be made by the use of chlorine gas only. The dry gas shall be fed directly through proper devices for regulating the rate of flow and providing effective diffusion of the gas into the water within the pipe being treated. Chlorinating devices for feeding the chlorine gas must provide means

for preventing the backflow of water into the chlorine. The chlorine gas shall be injected into the main at intervals of no more than 1,000 feet.

**Point of Application.** The preferred point of application of the chlorine gas is at the beginning of the pipe line extension or any valved section of it, and through a corporation stop inserted in the pipe. The water injector for delivering the chlorine-bearing water into the pipe should be supplied from a tap made on the pressure side of the gate valve controlling the flow into the pipe line extension. Alternate points of application may be used subject to the review of the Engineer.

**Preventing Reverse Flow.** Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water. Check valves may be used if desired.

**Retention Period.** Treated water shall be retained in the pipe at least twenty-four (24) hours. After this period, the chlorine residual at pipe extremities and at other representative points shall be at least twenty-five (25) mg/l.

**Chlorinating Valves and Hydrants.** In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipe line is filled with the chlorinating agent and under normal operating pressure.

**Final Flushing and Testing.** Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the replacement water throughout its entire length shows, upon test, a chlorine residual of less than one (1) mg/l. In the event chlorine is normally used in the source of supply, then the test shall show a residual of not in excess of that carried in the system.

Chlorinated water to be flushed into the sanitary sewer, not the storm sewer.

Contractor to notify the City prior to discharging chlorinated water to the sanitary sewer.

At this time a water sample will be taken by the Contractor or his representative and sent to a state-certified water lab of his choice. Also at this time the City will witness the sampling. The Contractor shall take two (2) samples, 24 hours apart with satisfactory results or the procedure shall be repeated.

**Repetition of Flushing and Testing.** Should the initial treatment result in an unsatisfactory bacterial test, the original chlorination procedure shall be repeated by the Contractor until satisfactory results are obtained. After water main passes chlorination testing, the corporation stop used to chlorinate the main shall be shut off and any piping removed.

**Method of Measurement and Basis of Payment.** This work shall not be measured separately and shall be included in the bid price for the water main installation.

**ABANDON EXISTING WATER MAIN**

**Description.** This work shall consist of the abandonment of portions of existing water main as shown on the plans and as directed by the Engineer to construct the proposed improvements.

Existing water main shall be abandoned only after all new water services have been transferred over to the new main and the new main is in operation.

Water main to be abandoned shall be drained of all water shall be plugged at both ends with a minimum of two (2) feet of non-shrink concrete/mortar plugs to the satisfaction of the Engineer. Pumping access points shall be at the proposed excavation locations.

Existing water main in direct conflict with proposed utilities shall be removed in accordance with the special provision for WATER MAIN REMOVAL included herein.

**Basis of Payment.** All labor, materials and equipment necessary to complete the work as specified for ABANDON EXISTING WATER MAIN shall not be paid for separately but shall be included in the bid price for the installation of the water main.

**WATER VALVES**

**Description.** This work shall consist of the installation of water valves of the resilient wedge gate valve type suitable for ordinary water-works service, intended to be installed in a normal position on buried pipelines for water distribution systems. This work shall be completed in accordance with applicable City Standard Details noted on the plans.

**Construction Requirements.** As a minimum, all gate valves shall, in design, material and workmanship, conform to the standards of the latest AWWA C515 and AWWA C509. Further details and notes on materials and installation are provided on the plans. All materials used in the manufacture of waterworks gate valves shall conform to the AWWA standards designed for each material listed.

**Materials.** All materials shall be per applicable City Standard Detail No. 60-4

1. **Manufacturer and Marking** - The gate valves shall be standard pattern and shall have the name or mark of the manufacturer, size and working pressure plainly cast in raised letters on the valve body. Valves shall be a Mueller 2361-20, EJIW C515:AWWA C509 with Mechanical joint fittings and Mega-Luge Retainer Glands by EBAA Iron or Ford Wedge Action Retainer with Duratron Sac-Nuts installed per the table below:

NOMINAL PIPE SIZE (INCHES)	NUMBER OF SAC-NUTS
4	2
6	3
8	3
12	4



2. Type and Mounting - The valve bodies shall be mounted with approved non-corrosive metals. All wearing surfaces shall be bronze or other approved non-corrosive material and there shall be no moving bearing or contact surfaces of iron in contact with iron. Contact surfaces shall be machined and finished in the best workmanlike manner, and all wearing surfaces shall be easily renewable. All trim bolts shall be 300 series stainless steel.

The resilient-seated disc wedge shall be of the resilient wedge fully-supported type. Solid guide lugs shall travel within channels in the body of the valve. The disc and guide lugs shall be fully (100%) encapsulated in SBR (styrene butadiene) rubber.

Disc wedges that are not 100% fully encapsulated shall not be acceptable. Guide caps of an acetal copolymer bearing material shall be provided to protect the rubber-encapsulated solid guide lugs from abrasion for long life and ease of operation.

All internal and external exposed ferrous surfaces of the valve shall be coated with a fusion-bonded, thermosetting powder epoxy coating conforming to AWWA C550 and certified to NSF 61. Coating shall be non-toxic and shall impart no taste to water. Coating thickness shall be nominal 10 mils.

The stem shall be of high tensile strength bronze or other approved non-corrosive metal, providing 70,000 PSI tensile strength with 15% elongation and a yield strength of 30,000 PSI. All nonferrous bushings shall be of substantial thickness, tightly fitted and pressed into machine seats. All valves shall open by turning to the left (counterclockwise), unless otherwise specified.

3. End Connections - End connections of gate valves shall consist of Mechanical Joints and Mega-Lug retainer glands.

All gate valves are to be installed in concrete valve vaults as detailed in the plans. The valves shall be wrapped with polyethylene film, as specified in the Special Provision for DUCTILE IRON WATER MAIN, included elsewhere herein. Valves shall be installed using stainless steel bolts. A one inch (1") corporation stop shall be installed in the water main on each side of the valve within the vault to allow for testing, chlorinating, and sampling work to be done.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price each for WATER VALVES, of the size specified. This price shall include the cost of all labor, materials and equipment necessary to install the gate valve in a valve vault including corporation stops as detailed in the plans and as specified herein. The valve vault will be paid for separately.

**ADJUSTING SANITARY SEWERS, 8-INCH DIAMETER OR LESS**

**Description.** This work shall consist of adjusting sanitary sewer services of 8-inch diameter or less where the proposed storm sewer or water main is in conflict with the existing sanitary service in accordance with Section 563 of the Standard Specification, the detail in the plans and as specified

herein. This work shall be completed in accordance with applicable Village Standard Details noted on the plans.

The exact locations of existing sewer and sewer connections are to be verified in the field by the Contractor.

**Materials.** Sanitary sewer shall be PVC meeting AWWA C900 with joints conforming to ASTM F477 and D3139. Connections to existing sewer shall be made with stainless steel shielded couplings, gasket to meet ASTM C1173-91, 300 series stainless steel shear ring with a minimum thickness of 0.012", 316 grade stainless steel nut and bolt tightening clamps, shear ring and clamps to meet all requirements of ASTM A167-91, transitional sizes to utilize a one piece gasket.

**Measurement and Payment.** This work will be paid for at the contract unit price per foot for ADJUSTING SANITARY SEWERS, 8-INCH DIAMETER OR LESS which price shall include all pipe removal and replacement, joint materials, marking all connections, excavation and backfilling, except that trench backfill will be measured separately for payment.

#### **FIRE HYDRANT TO BE REMOVED**

**Description.** This work shall consist of the removal of existing fire hydrants, including auxiliary valves, and plugging and blocking of abandoned water main at the tee as indicated on the plans or required by the ENGINEER. The existing fire hydrants are not to be removed until after the new fire hydrants have been installed and satisfactorily tested. The fire hydrants to be removed shall become the property of the OWNER and shall be delivered to the Public Works Facility. The CONTRACTOR is to bag any existing or new fire hydrants that are not in use. Holes created by removing fire hydrants shall be backfilled to the satisfaction of the engineer, including trench backfill. No separate payment shall be made for backfill.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price each for FIRE HYDRANT TO BE REMOVED which price shall be payment in full for all labor, caps/plugs, equipment, and material necessary to complete the work as specified herein.

#### **FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX**

**Description.** This work shall consist of furnishing new fire hydrants at the locations indicated on the plans or otherwise directed by the Engineer. All materials and construction shall be in accordance with applicable City Standard Details. As a minimum, the design, materials and workmanship of all fire hydrants shall conform to the applicable portions of AWWA C502 as well as Section 45 of the Water and Sewer Specifications. This work shall be completed in accordance with applicable City Standard Details noted on the plans.

All fire hydrants shall have a safety break flange no more than 2" above finished grade. The depth of bury on all hydrants shall be 5.5'. The finished grade on all hydrants shall be no more than 20" from finished grade to the center of the pumper cap. All fire hydrants shall be equipped with a Storz connection port on the front nozzle of the hydrant. Fire Hydrants shall be EJIW 5BR250 Watermaster Hydrant with a Plain End Inlet with Integral Gland or Mueller Centurion. All hydrants shall be red and repainted after installation EJIW Part# 00982020. All fire hydrants shall be equipped with an attached

auxiliary valve and cast-iron valve box. All below grade trim bolts shall be 300 series stainless steel. The auxiliary valve shall be six (6") inch EJIW C515 Auxiliary Gate Valve or a six (6") Mueller 2361-20 Valve. The water main from the hydrant to the water main shall be a six (6) inch ductile iron water pipe conforming to AWWA Standards C151, C111, and C104 installation shall be included in the work. The valve boxes shall be the adjustable type Mueller 10360, or EJIW 6645 Valve Box installed with a Valve Box Stabilizer, shall be set at finished grade, and shall have the valve box covers stamped "Water".

Fire hydrants shall be installed as shown on the details included in the plans. A minimum of 0.5 cubic yard of coarse aggregate shall be placed at and around the base of the hydrant to promote proper drainage of the hydrant after use. The hydrant shall be set on a concrete block to ensure firm bearing for the hydrant base. The hydrant, valve and tee shall be interconnected with steel tie rods. The Contractor shall submit his method of construction of the tie rods to the Engineer for prior review. Thrust blocks will not be required at the base of the hydrant. Stainless steel bolts shall be used at all fittings.

Fire hydrants shall be placed at the locations as shown in the plans or as directed by the Engineer.

All fire hydrants shall be installed in accordance with City Specifications and shall be inspected by the City prior to backfilling.

This work will be paid for at the contract unit price each for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX, which price shall include the cost of all labor, materials, and equipment necessary to install the fire hydrant with auxiliary valve and valve box, as detailed in the plans and to the satisfaction of the Engineer. The cost of all tie rods shall be incidental to this item.

**Basis of Payment.** This work will be paid for at the contract unit price each for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX, which price for all work as specified herein.

**DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED**

**Description.** This work shall consist of adjusting domestic water service boxes to match the proposed finished grade as directed by the ENGINEER, in accordance with Section 565 of the STANDARD SPECIFICATIONS.

Top sections, extensions and/or caps compatible with the existing box, may be required to adjust the box to the final grade. Replacement of damaged caps shall be considered included in the cost of this item.

For boxes which are located in sidewalks or driveways constructed as part of this improvement, the CONTRACTOR is responsible for confirming all caps and bolts can be opened after the concrete or asphalt has been placed. The CONTRACTOR shall confirm each roadway is keyable. If the CONTRACTOR cannot key the roadway, he shall notify the ENGINEER. After the work has been completed, the CONTRACTOR shall open each box in the presence of the ENGINEER.

Domestic water services boxes shall be adjusted at locations determined by the ENGINEER in the

field.

**Basis of Payment.** This work shall be paid for at the contract unit price per each for DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED, which price shall include all labor, materials, and equipment necessary to complete the work as specified.

### **REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (PROJECT SPECIFIC)**

**Description.** This work shall consist of the removal and disposal of regulated substances according to Section 669 of the Standard Specifications as revised below.

**Contract Specific Sites.** The excavated soil and groundwater within the areas listed below shall be managed as either “uncontaminated soil”, hazardous waste, special waste or non-special waste. For stationing, the lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit, whichever is less.

**Soil Disposal Analysis.** When the waste material requires sampling for landfill disposal acceptance, the Contractor shall secure a written list of the specific analytical parameters and analytical methods required by the landfill. The Contractor shall collect and analyze the required number of samples for the parameters required by the landfill using the appropriate analytical procedures. A copy of the required parameters and analytical methods (from landfill email or on landfill letterhead) shall be provided as Attachment 4A of the BDE 2733 (Regulated Substances Final Construction Report). The price shall include all sampling materials and effort necessary for collection and management of the samples, including transportation of samples from the job site to the laboratory. The Contractor shall be responsible for determining the specific disposal facilities to be utilized; and collect and analyze any samples required for disposal facility acceptance using a NELAP certified analytical laboratory registered with the State of Illinois.

#### Site 3566V-1: Commercial Building, 1025-1069 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 69+60 to Station 71+20 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.

#### Site 3566V-4: Summit Plaza, 983 E. 9<sup>th</sup> Street and 310-500 Summit Drive, Lockport, Will County

- Station 66+25 to Station 66+80 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.
- Station 66+80 to Station 67+40 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Manganese.
- Station 67+40 to Station 69+60 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, Arsenic and Manganese.

Site 3566V-5: Drake Commons, 968-988 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 64+50 to Station 64+90 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, Arsenic and Manganese.
- Station 64+30 to Station 64+90 (CL E. 9<sup>th</sup> Street), 50 to 95 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene and Lead.
- Station 64+90 to Station 71+20 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene and Indeno(1,2,3-cd)pyrene.

Site 3566V-8: Vacant Land, 900 block of E. 9<sup>th</sup> Street, Lockport, Will County

- Station 61+40 to Station 64+50 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Lead and Manganese.
- Station 63+70 to Station 64+30 (CL E. 9<sup>th</sup> Street), 50 to 95 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Lead.

Site 3566V-9: Shepherd of the Hill Lutheran Church, 925 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 56+40 to Station 59+25 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic, Lead and Manganese.
- Station 60+70 to Station 62+20 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 62+20 to Station 65+25 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.

Site 3566V-10: Commercial Building, 960 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 59+25 to Station 61+40 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic and Manganese.

Site 3566V-11: Dairy Queen, 950 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 58+00 to Station 58+40 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic and Manganese.
- Station 58+40 to Station 59+00 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene.

- Station 59+00 to Station 59+25 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.

Site 3566V-12: Lockport Plaza, 922-954 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 52+90 to Station 54+10 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 54+10 to Station 55+10 (CL E. 9<sup>th</sup> Street), 0 to 55 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Lead and Manganese.
- Station 55+10 to Station 57+10 (CL E. 9<sup>th</sup> Street), 0 to 55 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead and Manganese.
- Station 57+10 to Station 57+80 (CL E. 9<sup>th</sup> Street), 0 to 55 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Benzo(b)fluoranthene and Dibenz(a,h)anthracene.
- Station 57+80 to Station 58+00 (CL E. 9<sup>th</sup> Street), 0 to 55 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic and Manganese.

Site 3566V-13: Burger King, 919 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 54+50 to Station 54+75 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic, Lead and Manganese.
- Station 54+75 to Station 55+40 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 55+40 to Station 56+40 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.

Site 3566V-14: American Family Insurance, 909 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 53+90 to Station 54+50 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic, Lead and Manganese.

Site 3566V-15: Jim & Tom's Automotive, 900 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 51+30 to Station 52+40 (CL E. 9<sup>th</sup> Street), 0 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead and Manganese.
- Station 52+40 to Station 52+90 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Arsenic.

Site 3566V-16: Nicky's Gyros, 903 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 51+30 to Station 52+50 (CL E. 9<sup>th</sup> Street), 0 to 110 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.
- Station 52+50 to Station 53+25 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene and Manganese.
- Station 53+25 to Station 53+90 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.

At the Nicky's Gyros property, Manganese was detected at a concentration exceeding the TACO Tier 1 Soil Remediation Objective for the Construction Worker Ingestion Exposure Route in Soil Boring 16-04, from the sample interval of 5 to 10 feet deep, as noted in the Final Preliminary Site Investigation Report for this project, submitted November 9, 2017, by Huff & Huff. Procedures shall be implemented to protect site workers and observers from hazards encountered during construction activities in locations containing contaminated materials, pursuant to Article 669 of the Standard Specifications for Road and Bridge Construction manual.

Site 3566V-18: Residences, 701 E. 9<sup>th</sup> Street, 911-919 E. 7<sup>th</sup> Street and 899-904 E. 8<sup>th</sup> Street, Lockport, Will County

- Station 47+00 to Station 48+60 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene and Arsenic.
- Station 49+85 to Station 51+30 (CL E. 9<sup>th</sup> Street), 0 to 100 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(b)(1).

Site 3566V-19: Residences, 602-604 E. 7<sup>th</sup> Street, Lockport, Will County

- Station 50+00 to Station 50+65 (CL E. 9<sup>th</sup> Street), 50 to 110 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.

Site 3566V-22: BMO Harris, 826 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 45+75 to Station 46+50 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Dibenz(a,h)anthracene, Arsenic and Lead.
- Station 46+50 to Station 47+00 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic.

Site 3566V-23: Lockport Township Fire Protection District Station 1, 828 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 47+00 to Station 47+60 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic.
- Station 47+60 to Station 48+50 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene.
- Station 48+50 to Station 49+10 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Arsenic.
- Station 49+10 to Station 50+00 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic.
- Station 49+50 to Station 50+00 (CL E. 9<sup>th</sup> Street), 50 to 115 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.
- Station 50+00 to Station 50+65 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic.

Site 3566V-24: Vacant Land, 800 block of E. 9<sup>th</sup> Street, Lockport, Will County

- Station 44+40 to Station 45+00 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Lead and Arsenic.

Site 3566V-25: Vacant Land, 800 block of E. 9<sup>th</sup> Street, Lockport, Will County

- Station 45+80 to Station 46+50 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 46+50 to Station 47+00 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: VOCs, Arsenic and Manganese.

Site 3566V-26: Milne Creek, 800 block of E. 9<sup>th</sup> Street, Lockport, Will County

- Station 45+00 to Station 45+75 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Lead and Arsenic.

Site 3566V-27: Commercial Building, 820 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 43+55 to Station 44+40 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.



Site 3566V-28: Residences, 801 E. 9<sup>th</sup> Street, 908 Grandview Avenue and 900-907 McKinley Court, Lockport, Will County

- Station 41+50 to Station 42+50 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic.
- Station 42+50 to Station 43+50 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 43+50 to Station 45+45 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.
- Station 45+45 to Station 45+80 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.

Site 3566V-29: GL Quality Auto Detail, 816 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 41+55 to Station 41+90 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic and Lead.
- Station 43+10 to Station 43+55 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic.

Site 3566V-30: First Congregational Church, 700-704 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 35+00 to Station 35+80 (CL E. 9<sup>th</sup> Street), 0 to 55 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.
- Station 35+80 to Station 37+25 (CL E. 9<sup>th</sup> Street), 0 to 55 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 37+25 to Station 38+75 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.
- Station 38+75 to Station 40+25 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic and Manganese.
- Station 40+25 to Station 41+25 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene.
- Station 41+25 to Station 41+55 (CL E. 9<sup>th</sup> Street), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic and Lead.

Site 3566V-31: Residences, 707 E. 9<sup>th</sup> Street and 903 Grandview Avenue, Lockport, Will County

- Station 38+60 to Station 39+65 (CL E. 9<sup>th</sup> Street), 0 to 70 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic.

Site 3566V-32: Porter Plaza, 703 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 36+25 to Station 36+80 (CL E. 9<sup>th</sup> Street), 0 to 75 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic.
- Station 36+80 to Station 37+25 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 37+25 to Station 38+60 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.

Site 3566V-33: Motors N More, 609 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 34+60 to Station 34+75 (CL E. 9<sup>th</sup> Street), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic, Lead and Manganese.
- Station 34+75 to Station 35+25 (CL E. 9<sup>th</sup> Street), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.
- Station 35+25 to Station 35+65 (CL E. 9<sup>th</sup> Street), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 35+65 to Station 36+25 (CL E. 9<sup>th</sup> Street), 0 to 75 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: VOCs.

Site 3566V-34: Dominos, 604 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 33+45 to Station 33+75 (CL E. 9<sup>th</sup> Street), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.
- Station 33+75 to Station 34+25 (CL E. 9<sup>th</sup> Street), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 34+25 to Station 35+00 (CL E. 9<sup>th</sup> Street), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.

Site 3566V-35: Residential Buildings, 515-607 E. 9<sup>th</sup> Street, 900-904 Lincoln Street and 904-908 Madison Street, Lockport, Will County

- Station 29+65 to Station 34+60 (CL E. 9<sup>th</sup> Street), 0 to 60 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic, Lead and Manganese.

Site 3566V-36: Tuffy's Auto Care, 600 E. 9<sup>th</sup> Street, Lockport, Will County

- Station 32+10 to Station 32+50 (CL E. 9<sup>th</sup> Street), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Lead and Manganese.
- Station 32+50 to Station 33+15 (CL E. 9<sup>th</sup> Street), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead and Manganese.
- Station 33+15 to Station 33+45 (CL E. 9<sup>th</sup> Street), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.

Site 3566V-37: Residential Buildings, 506-524 E. 9<sup>th</sup> Street and 818 Madison Street, Lockport, Will County

- Station 29+65 to Station 31+40 (CL E. 9<sup>th</sup> Street), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic and Manganese.
- Station 31+40 to Station 32+10 (CL E. 9<sup>th</sup> Street), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Arsenic and Manganese.

**Work Zones**

Three distinct OSHA HAZWOPER work zones (exclusion, decontamination, and support) shall apply to projects adjacent to or within sites with documented leaking underground storage tank (LUST) incidents, or sites under management in accordance with the requirements of the Site Remediation Program (SRP), Resource Conservation and Recovery Act (RCRA), 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**

**Engineered Barrier.** An engineered barrier shall be installed in storm sewer, sanitary sewer and/or water main trenches to limit the exposure and control the migration of contamination from the contaminated soil that remains within the trench excavation. It shall be placed beneath the trench backfill material at the following locations:

- Station 53+35 to Station 53+90 (CL E. 9<sup>th</sup> Street), 0 to 50 feet RT (Nicky's Gyros, PESA Site 3566V-16, 903 E. 9<sup>th</sup> Street, Lockport) – non-special waste. Contaminants of concern sampling parameters: Manganese.

The engineered barrier shall consist of a geosynthetic clay liner system, geomembrane liner, or equivalent material as approved by the Engineer. A geosynthetic clay liner shall be composed of a bentonite clay liner approximately 0.25 inches thick. The engineered barrier shall have a permeability

of less than  $10^{-7}$  cm/sec. Installation of the geosynthetic clay liner system shall be in accordance with the manufacturer's recommendations except that all laps shall face down-slope.

The geomembrane liner shall have a minimum thickness of 30 mils. The geomembrane liner shall line the entire trench and in accordance with the manufacturer's recommendations.

No equipment will be allowed on the engineered barrier until it is covered by a minimum of 1 foot of backfill. Any damage to the engineered barrier caused by the Contractor shall be repaired at no additional expense to the Department in accordance with the manufacturer's recommendations and as directed by the Engineer.

Method of Measurement: The engineered barrier will be measured for payment in place and the area computed in square yards.

Basis of Payment: The engineered barrier will be paid for at the contract unit price per square yard for ENGINEERED BARRIER.

## **TRAFFIC SIGNAL GENERAL REQUIREMENTS**

Effective: May 22, 2002

Revised: March 25, 2016

800.01TS

These Traffic Signal Special Provisions and the "District One Standard Traffic Signal Design Details" supplement the requirements of the State of Illinois "Standard Specifications for Road and Bridge Construction." The intent of these Special Provisions is to prescribe the materials and construction methods commonly used for traffic signal installations.

- All material furnished shall be new unless otherwise noted herein.
- Traffic signal construction and maintenance work shall be performed by personnel holding current IMSA Traffic Signal Technician Level II certification. A copy of the certification shall be immediately available upon request of the Engineer.
- The work to be done under this contract consists of furnishing, installing and maintaining all traffic signal work and items as specified in the Plans and as specified herein in a manner acceptable and approved by the Engineer.

### **Definitions of Terms.**

Add the following to Section 101 of the Standard Specifications:

101.56 Vendor. Company that sells a particular type of product directly to the contractor or the Equipment Supplier.

101.57 Equipment supplier. Company that supplies, represents and provides technical support for IDOT District One approved traffic signal controllers and other related equipment. The Equipment Supplier shall be located within IDOT District One and shall:

- Be full service with on-site facilities to assemble, test and trouble-shoot traffic signal controllers and cabinet assemblies.
- Maintain an inventory of IDOT District One approved controllers and cabinets.
- Be staffed with permanent sales and technical personnel able to provide traffic signal controller and cabinet expertise and support.
- Technical staff shall hold current IMSA Traffic Signal Technician Level III certification and shall attend traffic signal turn-ons and inspections with a minimum 14 calendar day notice.

### **Submittals.**

Revise Article 801.05 of the Standard Specifications to read:

All material approval requests shall be submitted electronically through the District's SharePoint System unless directed otherwise by the Engineer. Electronic material submittals shall follow the District's Traffic Operations Construction Submittals guidelines. General requirements include:

1. All material approval requests shall be made prior to or no later than the date of the preconstruction meeting. A list of major traffic signal items can be found in Article 801.05. Material or equipment which is similar or identical shall be the product of the same

manufacturer, unless necessary for system continuity. Traffic signal materials and equipment shall bear the U.L. label whenever such labeling is available.

2. Product data and shop drawings shall be assembled by pay item. Only the top sheet of each pay item submittal will be stamped by the Department with the review status, except shop drawings for mast arm pole assemblies and the like will be stamped with the review status on each sheet.
3. Original manufacturer published product data and shop drawing sheets with legible dimensions and details shall be submitted for review.
4. When hard copy submittals are necessary, four complete copies of the manufacturer's descriptive literatures and technical data for the traffic signal materials shall be submitted. For hard copy or electronic submittals, the descriptive literature and technical data shall be adequate for determining whether the materials meet the requirements of the plans and specifications. If the literature contains more than one item, the Contractor shall indicate which item or items will be furnished.
5. When hard copy submittals are necessary for structural elements, four complete copies of the shop drawings for the mast arm assemblies and poles, and the combination mast arm assemblies and poles showing, in detail, the fabrication thereof and the certified mill analyses of the materials used in the fabrication, anchor rods, and reinforcing materials shall be submitted.
6. Partial or incomplete submittals will be returned without review.
7. Certain non-standard mast arm poles and special structural elements will require additional review from IDOT's Central Office. Examples include ornamental/decorative, non-standard length mast arm pole assemblies and monotube structures. The Contractor shall account for the additional review time in his schedule.
8. The contract number or permit number, project location/limits and corresponding pay code number must be on each sheet of correspondence, catalog cuts and mast arm poles and assemblies drawings.
9. Where certifications and/or warranties are specified, the information submitted for approval shall include certifications and warranties. Certifications involving inspections, and/or tests of material shall be complete with all test data, dates, and times.
10. After the Engineer reviews the submittals for conformance with the design concept of the project, the Engineer will stamp the drawings indicating their status as 'Approved', 'Approved-As-Noted', 'Disapproved', or 'Incomplete'. Since the Engineer's review is for conformance with the design concept only, it is the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, layout drawings, or other documents by the Department's approval thereof. The Contractor must still be in full compliance with contract and specification requirements.
11. The Contractor shall secure approved materials in a timely manner to assure construction schedules are not delayed.
12. All submitted items reviewed and marked 'APPROVED AS NOTED', 'DISAPPROVED', or 'INCOMPLETE' are to be resubmitted in their entirety, unless otherwise indicated within the submittal comments, with a disposition of previous comments to verify contract compliance at no additional cost to the contract.

13. Exceptions to and deviations from the requirements of the Contract Documents will not be allowed. It is the Contractor's responsibility to note any deviations from Contract requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution is superior to the material or equipment required by the Contract Documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.
14. Contractor shall not order major equipment such as mast arm assemblies prior to Engineer approval of the Contractor marked proposed traffic signal equipment locations to assure proper placement of contract required traffic signal displays, push buttons and other facilities. Field adjustments may require changes in proposed mast arm length and other coordination.

**Marking Proposed Locations.**

Revise "Marking Proposed Locations for Highway Lighting System" of Article 801.09 to read "Marking Proposed Locations for Highway Lighting System and Traffic Signals."

Add the following to Article 801.09 of the Standard Specifications:

It shall be the contractor's responsibility to verify all dimensions and conditions existing in the field prior to ordering materials and beginning construction. This shall include locating the mast arm foundations and verifying the mast arms lengths.

**Inspection of Electrical Systems.**

Add the following to Article 801.10 of the Standard Specifications:

- (c) All cabinets including temporary traffic signal cabinets shall be assembled by an approved equipment supplier in District One. The Department reserves the right to request any controller and cabinet to be tested at the equipment supplier's facility prior to field installation, at no extra cost to this contract.

**Maintenance and Responsibility.**

Revise Article 801.11 of the Standard Specifications to read:

- a. Existing traffic signal installations and/or any electrical facilities at all or various locations may be altered or reconstructed totally or partially as part of the work on this Contract. The Contractor is hereby advised that all traffic control equipment, presently installed at these locations, may be the property of the State of Illinois, Department of Transportation, Division of Highways, County, Private Developer, Municipality or Transit Agency in which they are located. Once the Contractor has begun any work on any portion of the project, all traffic signals within the limits of this contract or those which have the item "Maintenance of Existing Traffic Signal Installation," "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation," shall become the full responsibility of the Contractor. The Contractor shall supply the Engineer, Area Traffic Signal Maintenance and Operations Engineer, IDOT ComCenter

and the Department's Electrical Maintenance Contractor with two 24-hour emergency contact names and telephone numbers.

- b. Automatic Traffic Enforcement equipment such as red lighting running and railroad crossing camera systems are owned and operated by others and the Contractor shall not be responsible for maintaining this equipment.
- c. Regional transit, County and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as PTZ cameras, switches, transit signal priority (TSP and BRT) servers and other devices that shall be included with traffic signal maintenance at no additional cost to the contract.
- d. When the project has a pay item for "Maintenance of Existing Traffic Signal Installation," "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation," the Contractor must notify both the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 and the Department's Electrical Maintenance Contractor, of their intent to begin any physical construction work on the Contract or any portion thereof. This notification must be made a minimum of seven (7) working days prior to the start of construction to allow sufficient time for inspection of the existing traffic signal installation(s) and transfer of maintenance to the Contractor. The Department will attempt to full-fill the Contractor's inspection date request(s), however workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested inspection date(s) cannot be scheduled by the Department. If work is started prior to an inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The Contractor will become responsible for repairing or replacing all equipment that is not operating properly or is damaged at no cost to the owner of the traffic signal. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted.
- e. The Contractor is advised that the existing and/or temporary traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation, which exceeds fifteen (15) minutes, must have prior approval of the Engineer. Approval to shut down the traffic signal installation will only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.
- f. The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals and other equipment noted herein. Any inquiry, complaint or request by the Department, the Department's Electrical Maintenance Contractor or the public, shall be investigated and repairs begun within one hour. Failure to provide this service will result in liquidated damages of \$1000 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the



Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$1000 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. The Department may inspect any signaling device on the Department's highway system at any time without notification.

- g. Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) regarding work in temporary traffic control zones in the vicinity of highway-rail grade crossings which states that lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the railroad tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place.
- h. The Contractor shall be responsible to clear snow, ice, dirt, debris or other condition that obstructs visibility of any traffic signal display or access to traffic signal equipment.
- i. The Contractor shall maintain the traffic signal in normal operation during short or long term loss of utility or battery back-up power at critical locations designated by the Engineer. Critical locations may include traffic signals interconnected to railroad warning devices, expressway ramps, intersection with an SRA route, critical corridors or other locations identified by the Engineer. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries. Temporary power to critical locations shall not be for separately but shall be included in the contract.

**Damage to Traffic Signal System.**

Add the following to Article 801.12(b) of the Standard Specifications to read:

Any traffic signal control equipment damaged or not operating properly from any cause shall be replaced with new equipment meeting current District One traffic signal specifications and provided by the Contractor at no additional cost to the Contract and/or owner of the traffic signal system, all as approved by the Engineer. Final replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted. Cable splices are only allowed at the bases of post and mast arms.

Temporary replacement of damaged or knockdown of a mast arm pole assembly shall require construction of a full or partial span wire signal installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals will not be permitted.

Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, and peripheral equipment, damaged or not operating properly from any cause, shall be the responsibility of the municipality or the Automatic Traffic Enforcement company per Permit agreement.

**Traffic Signal Inspection (TURN-ON).**

Revise Article 801.15(b) of the Standard Specifications to read:

It is the intent to have all electric work completed and equipment field tested by the Equipment Supplier prior to the Department's "turn-on" field inspection. If in the event the Engineer determines work is not complete and the inspection will require more than two (2) hours to complete, the inspection shall be canceled and the Contractor will be required to reschedule at another date. The maintenance of the traffic signals will not be accepted until all punch list work is corrected and re-inspected.

When the road is open to traffic, except as otherwise provided in Section 850 of the Standard Specifications, the Contractor may request a turn-on and inspection of the completed traffic signal installation at each separate location. This request must be made to the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 a minimum of seven (7) working days prior to the time of the requested inspection. The Department will attempt to full-fill the Contractor's turn-on and inspection date request(s), however workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested turn-on and inspection date(s) cannot be scheduled by the Department. The Department will not grant a field inspection until written or electronic notification is provided from the Contractor that the equipment has been field tested and the intersection is operating according to Contract requirements. The Contractor must invite local fire department personnel to the turn-on when Emergency Vehicle Preemption (EVP) is included in the project. When the contract includes the item RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM, OPTIMIZE TRAFFIC SIGNAL SYSTEM, or TEMPORARY TRAFFIC SIGNAL TIMINGS, the Contractor must notify the SCAT Consultant of the turn-on/detour implementation schedule, as well as stage changes and phase changes during construction.

The Contractor must have all traffic signal work completed and the electrical service installation connected by the utility company prior to requesting an inspection and turn-on of the traffic signal installation. The Contractor shall be responsible to provide a police officer to assist with traffic control at the time of testing.

The Contractor shall provide a representative from the control equipment vendor's office who is knowledgeable of the cabinet design and controller functions to attend the traffic signal inspection for both permanent and temporary traffic signal turn-ons.

Upon demonstration that the signals are operating and all work is completed in accordance with the Contract and to the satisfaction of the Engineer, the Engineer will then allow the signals to be placed in continuous operation. The Agency that is responsible for the maintenance of each traffic signal installation will assume the maintenance upon successful completion of this inspection.

The District requires the following Final Project Documentation from the Contractor at traffic signal turn-ons in electronic format in addition to hard copies where noted. A CD/DVD shall be submitted with separate folders corresponding to each numbered title below. The CD/DVD shall be labelled with date, project location, company and contract or permit number. Record Drawings, Inventory and Material Approvals shall be submitted prior to traffic signal turn-on for review by the Department as described here-in.

Final Project Documentation:

1. Record Drawings. Signal plans of record with field revisions marked in red ink. One hard copy set of 11"x17" record drawings shall also be provided.
2. Inventory. Inventory of new and existing traffic signal equipment including cabinet types and devices within cabinets in an Excel spread sheet format. One hard copy shall also be provided.
3. Pictures. Digital pictures of a minimum 12M pixels of each intersection approach showing all traffic signal displays and equipment. Pictures shall include controller cabinet equipment in enough detail to clearly identify manufacture and model of major equipment.
4. Field Testing. Written notification from the Contractor and the equipment vendor of satisfactory field testing with corresponding material performance measurements, such as for detector loops and fiber optic systems (see Article 801.13). One hard copy of all contract required performance measurement testing shall also be provided.
5. Materials Approval. The material approval letter. A hard copy shall also be provided.
6. Manuals. Operation and service manuals of the signal controller and associated control equipment. One hard copy shall also be provided.
7. Cabinet Wiring Diagram and Cable Logs. Five (5) hard copies 11" x 17" of the cabinet wiring diagrams shall be provided along with electronic pdf and dgn files of the cabinet wiring diagram. Five hard copies of the cable logs and electronic excel files shall be provided with cable #, number of conductors and spares, connected device/signal head and intersection location.
8. Controller Programming Settings. The traffic signal controller's timings; backup timings; coordination splits, offsets, and cycles; TBC Time of Day, Week and Year Programs; Traffic Responsive Program, Detector Phase Assignment, Type and Detector Switching; and any other functions programmable from the keyboard. The controller manufacturer shall also supply a printed form, not to exceed 11" x 17" for recording that data noted above. The form shall include a location, date, manufacturer's name, controller model and software version. The form shall be approved by the Engineer and a minimum of three (3) copies must be furnished at each turn-on. The manufacturer must provide all programming information used within the controller at the time of turn-on.
9. Warrantees and Guarantees. All manufacturer and contractor warrantees and guarantees required by Article 801.14.
10. GPS coordinate of traffic signal equipment as describe in the Record Drawings section herein.

Acceptance of the traffic signal equipment by the Department shall be based upon inspection results

at the traffic signal “turn on”, completeness of the required documentation and successful operation during a minimum 72 hour “burn-in” period following activation of the traffic signal. If approved, traffic signal acceptance shall be verbal at the “turn on” inspection followed by written correspondence from the Engineer. The Contractor shall be responsible for all traffic signal equipment and associated maintenance thereof until Departmental acceptance is granted.

All equipment and/or parts to keep the traffic signal installation operating shall be furnished by the Contractor. No spare traffic signal equipment is available from the Department.

All punch list work shall be completed within two (2) weeks after the final inspection. The Contractor shall notify the Electrical Maintenance Contractor to inspect all punch list work. Failure to meet these time constraints shall result in liquidated damage charges of \$500 per month per incident.

All cost of work and materials required to comply with the above requirements shall be included in the pay item bid prices, under which the subject materials and signal equipment are paid, and no additional compensation will be allowed. Materials and signal equipment not complying with the above requirements shall be subject to removal and disposal at the Contractor's expense.

#### **Record Drawings.**

The requirements listed for Electrical Installation shall apply for Traffic Signal Installations in Article 801.16. Revise the 2<sup>nd</sup> paragraph of Article 801.16 of the Standard Specifications to read:

“When the work is complete, and seven days before the request for a final inspection, the reduced-size set of contract drawings, stamped “RECORD DRAWINGS”, shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor’s supervising Engineer or electrician. The record drawings shall be submitted in PDF format on CDROM as well as hardcopy for review and approval. If the contract consists of multiple intersections, each intersection shall be saved as an individual PDF file with TS# and location name in its file name.

In addition to the record drawings, copies of the final catalog cuts which have been Approved or Approved as Noted shall be submitted in PDF format along with the record drawings. The PDF files shall clearly indicate the pay item either by filename or PDF Table of Contents referencing the respective pay item number for multi-item PDF files. Specific part or model numbers of items which have been selected shall be clearly visible.”

As part of the record drawings, the Contractor shall inventory all traffic signal equipment, new or existing, on the project and record information in an Excel spreadsheet. The inventory shall include equipment type, model numbers, software manufacturer and version and quantities.

Add the following to Article 801.16 of the Standard Specifications:

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

- All Mast Arm Poles and Posts
- Traffic Signal Wood Poles
- Rail Road Bungalow
- UPS
- Handholes
- Conduit roadway crossings
- Controller Cabinets
- Communication Cabinets
- Electric Service Disconnect locations
- CCTV Camera installations
- Fiber Optic Splice Locations
- Conduit Crossings

Datum to be used shall be North American 1983.

Data shall be provided electronically and in print form. The electronic format shall be compatible with MS Excel. Latitude and Longitude shall be in decimal degrees with a minimum of 6 decimal places. Each coordinate shall have the following information:

- File shall be named: TSXXX-YY-MM-DD (i.e. TS22157\_15-01-01)
- Each intersection shall have its own file
- Row 1 should have the location name (i.e. IL 31 @ Klausen)
- Row 2 is blank
- Row 3 is the headers for the columns
- Row 4 starts the data
- Column A (Date) – should be in the following format: MM/DD/YYYY
- Column B (Item) – as shown in the table below
- Column C (Description) – as shown in the table below
- Column D and E (GPS Data) – should be in decimal form, per the IDOT special provisions

Examples:

<b>Date</b>	<b>Item</b>	<b>Description</b>	<b>Latitude</b>	<b>Longitude</b>
01/01/2015	MP (Mast Arm Pole)	NEQ, NB, Dual, Combination Pole	41.580493	- 87.793378
01/01/2015	HH (Handhole)	Heavy Duty, Fiber, Intersection, Double	41.558532	- 87.792571
01/01/2015	ES (Electrical Service)	Ground mount, Pole mount	41.765532	- 87.543571
01/01/2015	CC (Controller Cabinet)		41.602248	- 87.794053

01/01/2015	RSC (Rigid Steel Crossing)	IL 31 east side crossing south leg to center HH at Klausen	41.611111	-87.790222
01/01/2015	PTZ (PTZ)	NEQ extension pole	41.593434	-87.769876
01/01/2015	POST (Post)		41.651848	-87.762053
01/01/2015	MCC (Master Controller Cabinet)		41.584593	-87.793378
01/01/2015	COMC (Communication Cabinet)		41.584600	-87.793432
01/01/2015	BBS (Battery Backup System)		41.558532	-87.792571
01/01/2015	CNCR (Conduit Crossing)	4-inch IL 31 n/o of Klausen	41.588888	-87.794440

Prior to the collection of data, the contractor shall provide a sample data collection of at least six data points of known locations to be reviewed and verified by the Engineer to be accurate within 1 foot. Upon verification, data collection can begin. Data collection can be made as construction progresses, or can be collected after all items are installed. If the data is unacceptable the contractor shall make corrections to the data collection equipment and or process and submit the data for review and approval as specified.

Accuracy. Data collected is to be mapping grade. A handheld mapping grade GPS device shall be used for the data collection. The receiver shall support differential correction and data shall have a minimum 1 foot accuracy after post processing.

GPS receivers integrated into cellular communication devices, recreational and automotive GPS devices are not acceptable.

The GPS shall be the product of an established major GPS manufacturer having been in the business for a minimum of 6 years.”

Delete the last sentence of the 3<sup>rd</sup> paragraph of Article 801.16.

**Locating Underground Facilities.**

Revise Section 803 to the Standard Specifications to read:

IDOT traffic signal facilities are not part of any of the one-call locating service such as J.U.L.I.E or Digger. If this Contract requires the services of an Electrical Contractor, the Contractor shall be responsible at his/her own expense for locating existing IDOT electrical facilities prior to performing any work. If this Contract does not require the services of an Electrical Contractor, the Contractor

may request one free locate for existing IDOT electrical facilities from the District One Electrical Maintenance Contractor prior to the start of any work. Additional requests may be at the expense of the Contractor. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any facilities damaged during construction at their expense.

The exact location of all utilities shall be field verified by the Contractor before the installation of any components of the traffic signal system. For locations of utilities, locally owned equipment, and leased enforcement camera system facilities, the local Counties or Municipalities may need to be contacted: in the City of Chicago contact Digger at (312) 744-7000 and for all other locations contact J.U.L.I.E. at 1-800-892-0123 or 811.

### **Restoration of Work Area.**

Add the following article to Section 801 of the Standard Specifications:

801.17 Restoration of work area. Restoration of the traffic signal work area shall be included in the related pay items such as foundation, conduit, handhole, underground raceways, etc. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded. All brick pavers disturbed in the work area shall be restored to their original configuration as directed by the Engineer. All damaged brick pavers shall be replaced with a comparable material approved by the Engineer. Restoration of the work area shall be included in the contract without any extra compensation allowed to the Contractor.

### **Bagging Signal Heads.**

Light tan colored traffic and pedestrian signal reusable covers shall be used to cover dark/un-energized signal sections and visors. Covers shall be made of outdoor fabric with urethane coating for repelling water, have elastic fully sewn around the cover ends for a tight fit over the visor, and have a minimum of two straps with buckles to secure the cover to the backplate. A center mesh strip allows viewing without removal for signal status testing purposes. Covers shall include a message indicating the signal is not in service.

**COILABLE NON-METALLIC CONDUIT**

Effective: May 22, 2002

Revised: July 1, 2015

810.01TS

**Description.**

This work shall consist of furnishing and installing empty coilable non-metallic conduit (CNC).

**General.**

The CNC installation shall be in accordance with Sections 810 and 811 of the Standard Specifications except for the following:

Add the following to Article 810.03 of the Standard Specifications:

CNC meeting the requirements of NEC Article 353 shall be used for detector loop raceways to the handholes.

Add the following to Article 811.03 of the Standard Specifications:

On temporary traffic signal installations with detector loops, CNC meeting the requirements of NEC Article 353 shall be used for detector loop raceways from the saw-cut to 10 feet (3m) up the wood pole, unless otherwise shown on the plans

**Basis of Payment.**

All installations of CNC for loop detection shall be included in the contract and not paid for separately.



## **UNDERGROUND RACEWAYS**

Effective: May 22, 2002

Revised: November 1, 2023

810.02TS

Revise Article 810.04 of the Standard Specifications to read:

“Installation. All underground conduits shall have a minimum depth of 30 in. (700 mm) below the finished grade and shall be installed to avoid existing and proposed utilities within the project limits.”

Add the following to Article 810.04 of the Standard Specifications:

“All metal conduit installed underground shall be Rigid Steel Conduit unless otherwise indicated on the plans.”

Add the following to Article 810.04 of the Standard Specifications:

“All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 1 ft (300 mm) or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped.

The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap.

The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 1/8 in. (3 mm) thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring.”

## **HANDHOLES**

Effective: January 01, 2002

Revised: November 1, 2023

814.01TS

### **Description.**

Add the following to Section 814 of the Standard Specifications:

All conduits shall enter the handhole at a depth of 30 in. (762 mm) except for the conduits for detector loops when the handhole is less than 5 ft (1.52 m) from the detector loop. All conduit ends should be sealed with a waterproof sealant to prevent the entrance of contaminants into the handhole.

Steel cable hooks shall be epoxy coated and must meet the specifications set forth in 1006.10. Hooks shall be a minimum of 5/8 in. (16 mm) diameter with 90-degree bend and extend into the handhole at least 6 in. (152 mm). Hooks shall be placed a minimum of 12 in. (305 mm) below the lid or lower if additional space is required.

Precast round handholes shall not be used unless called out on the plans.

The cover of the handhole frame shall be labeled "Traffic Signals" with legible raised letters. Only handholes serving IDOT traffic signal equipment shall have this label. Handhole covers for Red Light Running Cameras shall be labeled "RLRC".

Revise the third paragraph of Article 814.03 of the Standard Specifications to read:

"Handholes shall be constructed as shown on the plans and shall be cast-in-place or precast concrete units. Heavy duty handholes shall be either cast-in-place or precast concrete units."

Revise Article 814.03(c) of the Standard Specifications to read:

"Precast Concrete. Precast concrete handholes shall be fabricated according to Article 1042.17. Where a handhole is contiguous to a sidewalk, preformed joint filler of 1/2 in. (13 mm) thickness shall be placed between the handhole and the sidewalk."

Add the following to Section 814 of the Standard Specifications:

### **Cast-In-Place Handholes.**

All cast-in-place handholes shall be concrete with minimum inside dimensions of 21-1/2 in. (546 mm). Frames and lid openings shall match this dimension.

For grounding purposes, the handhole frame shall have provisions for a 7/16 in. (11 mm) diameter stainless steel bolt cast into the frame. The covers shall have a stainless steel threaded stint extended from the eye hook assembly for the purpose of attaching the grounding conductor to the handhole cover.

The minimum wall thickness for heavy duty hand holes shall be 1 ft (305mm).

**Precast Round Handholes.**

All precast handholes shall be concrete with an inside diameter of 30 in. (762mm). Frames and covers shall have a minimum opening of 26 in. (660mm) and no larger than the inside diameter of the handhole.

For grounding purposes, the handhole frame shall have provisions for a 7/16 in. (11 mm) diameter stainless steel bolt cast into the frame. For the purpose of attaching the grounding conductor to the handhole cover, the covers shall either have a 7/16 in. (11 mm) diameter stainless steel bolt cast into the cover or a stainless steel threaded stint extended from an eye hook assembly. A hole may be drilled for the bolt if one cannot be cast into the frame or cover. The head of the bolt shall be flush or lower than the top surface of the cover.

The minimum wall thickness for precast heavy duty hand holes shall be 6 in. (152 mm).

Precast round handholes shall be only produced by an approved precast vendor.

**ELECTRIC CABLE**

Effective: May 22, 2002

Revised: July 1, 2015

873.01TS

Delete “or stranded, and No. 12 or” from the last sentence of Article 1076.04 (a) of the Standard Specifications.

Add the following to the Article 1076.04(d) of the Standard Specifications:

Service cable may be single or multiple conductor cable.

**MAINTENANCE OF EXISTING TRAFFIC SIGNAL AND FLASHING BEACON INSTALLATION**

Effective: May 22, 2002

Revised: July 1, 2015

850.01TS

**General.**

1. Full maintenance responsibility shall start as soon as the Contractor begins any physical work on the Contract or any portion thereof. If Contract work is started prior to a traffic signal inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection.
2. The Contractor shall have electricians with IMSA Level II certification on staff to provide signal maintenance. A copy of the certification shall be immediately available upon request of the Engineer.
3. This item shall include maintenance of all traffic signal equipment and other connected and related equipment such as flashing beacons, emergency vehicle pre-emption equipment, master controllers, uninterruptable power supply (UPS and batteries), PTZ cameras, vehicle detection, handholes, lighted signs, telephone service installations, communication cables, conduits to adjacent intersections, and other traffic signal equipment.
4. Regional transit, County and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as PTZ cameras, switches, transit signal priority (TSP and BRT) servers, radios and other devices that shall be included with traffic signal maintenance at no additional cost to the contract.
5. Maintenance shall not include Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, or peripheral equipment. This equipment is operated and maintained by the local municipality and should be de-activated while on contractor maintenance.
6. The energy charges for the operation of the traffic signal installation shall be paid for by the Contractor.

**Maintenance.**

1. The Contractor shall check all controllers every two (2) weeks, which will include visually inspecting all timing intervals, relays, detectors, and pre-emption equipment to ensure that they are functioning properly. The Contractor shall check signal system communications and phone lines to assure proper operation. This item includes, as routine maintenance, all portions of emergency vehicle pre-emption equipment. The Contractor shall maintain in stock at all times a sufficient amount of materials and equipment to provide effective temporary and permanent repairs. Prior to the traffic signal maintenance transfer, the contractor shall supply a detailed maintenance schedule that includes dates, locations, names of electricians providing the required checks and inspections along with any other information requested by the Engineer.

2. The Contractor is advised that the existing and/or span wire traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation, which exceeds fifteen (15) minutes, must have prior approval of the Engineer. Approval to shut down the traffic signal installation will only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.
3. The Contractor shall provide immediate corrective action when any part or parts of the system fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. When repairs at a signalized intersection require that the controller be disconnected or otherwise removed from normal operation, and power is available, the Contractor shall place the traffic signal installation on flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor shall be required to place stop signs (R1-1-36) at each approach of the intersection as a temporary means of regulating traffic. When the signals operate in flash, the Contractor shall furnish and equip all their vehicles assigned to the maintenance of traffic signal installations with a sufficient number of stop signs as specified herein. The Contractor shall maintain a sufficient number of spare stop signs in stock at all times to replace stop signs which may be damaged or stolen.
4. The Contractor shall provide the Engineer with 2 (two) 24 hour telephone numbers for the maintenance of the traffic signal installation and for emergency calls by the Engineer.
5. Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of the Standard Specifications and these special provisions.
6. The Contractor shall respond to all emergency calls from the Department or others within one (1) hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new and identical equipment. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional charge to the contract. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal installation in proper operating condition or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the State's Electrical Maintenance Contractor perform the maintenance work. The Contractor shall be responsible for all of the State's Electrical Maintenance Contractor's costs and liquidated damages of \$1000 per day per occurrence. The State's Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The Contractor shall pay this bill within thirty (30) days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor. The Contractor shall allow the Electrical Maintenance Contractor to make reviews of the Existing Traffic Signal Installation that has been transferred to the Contractor for Maintenance.

7. Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) regarding work in temporary traffic control zones in the vicinity of highway-rail grade crossings which states that lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the railroad tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place.
8. Equipment included in this item that is damaged or not operating properly from any cause shall be replaced with new equipment meeting current District One traffic signal specifications and provided by the Contractor at no additional cost to the Contract and/or owner of the traffic signal system, all as approved by the Engineer. Final replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted. Cable splices outside the controller cabinet shall not be allowed.
9. Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, and peripheral equipment, damaged or not operating properly from any cause, shall be the responsibility of the municipality or the Automatic Traffic Enforcement Company per Permit agreement.
10. The Contractor shall be responsible to clear snow, ice, dirt, debris or other condition that obstructs visibility of any traffic signal display or access to traffic signal equipment.
11. The Contractor shall maintain the traffic signal in normal operation during short or long term loss of utility or battery back-up power at critical locations designated by the Engineer. Critical locations may include traffic signals interconnected to railroad warning devices, expressway ramps, intersection with an SRA route, critical corridors or other locations identified by the Engineer. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries. Temporary power to critical locations shall not be paid for separately but shall be included in the contract.
12. Temporary replacement of damaged or knockdown of a mast arm pole assembly shall require construction of a full or partial span wire signal installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals will not be permitted.

**Basis of Payment.** This work will be paid for at the contract unit price per each for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION. Each intersection will be paid for separately. Maintenance of a standalone and or not connected flashing beacon shall be paid for at the contract unit price for MAINTENANCE OF EXISITNG FLASHING BEACON INSTALLATION. Each flashing beacon will be paid for separately. Maintenance of temporary signals and of the existing signals shall be included in the cost of the TEMPORARY TRAFFIC SIGNAL INSTALLATION pay item.

**TRAFFIC SIGNAL POST**

Effective: May 22, 2002

Revised: July 14, 2021

875.01TS

Revise Article 1077.01 (c) of the Standard Specifications to read:

- (c) Anchor Rods. The anchor rods shall be a minimum of 5/8 in. in diameter and 16 in. long and shall be according to Article 1006.09. The anchor rods shall be threaded approximately 6 in. at one end and have a bend at the other end. The first 12 in. at the threaded end shall be galvanized. One each galvanized nut and trapezoidal washer shall be furnished with each anchor rod. The washer shall be properly sized to fully engage and sit flush on all sides of the slot of the base plate.

Revise the first sentence of Article 1077.01 (d) of the Standard Specifications to read:

All posts shall be steel and bases shall be cast iron. All posts and bases shall be hot dipped galvanized according to AASHTO M 111. If the Department approves painting, powder coating by the manufacturer will be required over the galvanization in accordance with 851.01TS TRAFFIC SIGNAL PAINTING Special Provisions.

**MAST ARM ASSEMBLY AND POLE**

Effective: May 22, 2002

Revised: July 01, 2015

877.01TS

Revise the second sentence of Article 1077.03 (a)(3) of the Standard Specifications to read:

Traffic signal mast arms shall be one piece construction, unless otherwise approved by the Engineer.

Add the following to Article 1077.03 (a)(3) of the Standard Specifications:

If the Department approves painting, powder coating by the manufacturer will be required over the galvanization in accordance with 851.01TS TRAFFIC SIGNAL PAINTING Special Provisions.



**MAST ARM SIGN PANELS**

Effective: May 22, 2002

Revised: July 1, 2015

720.01TS

Add the following to Article 720.02 of the Standard Specifications:

Sign stiffening channel systems shall be aluminum and meet the requirements of ASTM 6261-T5. Sign mounting banding, buckles and buckle straps shall be manufactured from AISI 201 stainless steel.

**CONCRETE FOUNDATIONS**

Effective: May 22, 2002

Revised: November 01, 2018

878.01TS

Add the following to Article 878.03 of the Standard Specifications:

All anchor bolts shall be according to Article 1006.09, with all anchor bolts hot dipped galvanized a minimum of 12 in. at the threaded end.

No foundation is to be poured until the Resident Engineer gives his/her approval as to the depth of the foundation.

Add the following to the first paragraph of Article 878.05 of the Standard Specifications:

The concrete apron in front of the cabinet and UPS shall be included in this pay item.

**LIGHT EMITTING DIODE (LED) SIGNAL HEAD AND OPTICALLY PROGRAMMED LED SIGNAL HEAD**

Effective: May 22, 2002

Revised: July 1, 2015

880.01TS

**Materials.**

Add the following to Section 1078 of the Standard Specifications:

1. LED modules proposed for use and not previously approved by IDOT District One will require independent testing for compliance to current VTCSH-ITE standards for the product and be Intertek ETL Verified. This would include modules from new vendors and new models from IDOT District One approved vendors.
2. The proposed independent testing facility shall be approved by IDOT District One. Independent testing must include a minimum of two (2) randomly selected modules of each type of module (i.e. ball, arrow, pedestrian, etc.) used in the District and include as a minimum Luminous Intensity and Chromaticity tests. However, complete module performance verification testing may be required by the Engineer to assure the accuracy of the vendor's published data and previous test results. An IDOT representative will select sample modules from the local warehouse and mark the modules for testing. Independent test results shall meet current ITE standards and vendor's published data. Any module failures shall require retesting of the module type. All costs associated with the selection of sample modules, testing, reporting, and retesting, if applicable, shall be the responsibility of the LED module vendor and not be a cost to this contract.
3. All signal heads shall provide 12" (300 mm) displays with glossy yellow or black polycarbonate housings. All head housings shall be the same color (yellow or black) at the intersection. For new signalized intersections and existing signalized intersections where all signals heads are being replaced, the proposed head housings shall be black. Where only selected heads are being replaced, the proposed head housing color (yellow or black) shall match existing head housings. Connecting hardware and mounting brackets shall be polycarbonate (black). A corrosion resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on. Post top mounting collars are required on all posts, and shall be constructed of the same material as the brackets.
4. The LED signal modules shall be replaced or repaired if an LED signal module fails to function as intended due to workmanship or material defects within the first 7 years from the date of traffic signal TURN-ON. LED signal modules which exhibit luminous intensities less than the minimum values specified in Table 1 of the ITE Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Circular Signal Supplement (June 27, 2005) [VTSCH], or applicable successor ITE specifications, or show signs of entrance of moisture or contaminants within the first 7 years of the date of traffic signal TURN-ON shall be replaced or repaired. The vendor's written warranty for the LED signal modules shall be dated, signed by a vendor's representative and included in the product submittal to the State.

(a) Physical and Mechanical Requirements

1. Modules can be manufactured under this specification for the following faces:
  - a. 12 inch (300 mm) circular, multi-section
  - b. 12 inch (300 mm) arrow, multi-section
2. The maximum weight of a module shall be 4 lbs. (1.8 kg).
3. Each module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.
5. The lens of the module shall be tinted with a wavelength-matched color to reduce sun phantom effect and enhance on/off contrast. The tinting shall be uniform across the lens face. Polymeric lens shall provide a surface coating or chemical surface treatment applied to provide abrasion resistance. The lens of the module shall be integral to the unit, convex with a smooth outer surface and made of plastic. The lens shall have a textured surface to reduce glare.
6. The use of tinting or other materials to enhance ON/OFF contrasts shall not affect chromaticity and shall be uniform across the face of the lens.
7. Each module shall have a symbol of the type of module (i.e. circle, arrow, etc.) in the color of the module. The symbol shall be 1 inch (25.4 mm) in diameter. Additionally, the color shall be written out in 1/2 inch (12.7mm) letters next to the symbol.

(b) Photometric Requirements

4. The LEDs utilized in the modules shall be AlInGaP technology for red and InGaN for green and amber indications, and shall be the ultra bright type rated for 100,000 hours of continuous operation from -40 °C to +74 °C.

(c) Electrical

1. Maximum power consumption for LED modules is per Table 2.
2. Operating voltage of the modules shall be 120 VAC. All parameters shall be measured at this voltage.
3. The modules shall be operationally compatible with currently used controller assemblies (solid state load switches, flashers, and conflict monitors).
4. When a current of 20 mA AC (or less) is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.

5. The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.
6. LED arrows shall be wired such that a catastrophic loss or the failure of one or more LED will not result in the loss of the entire module.

(d) Retrofit Traffic Signal Module

1. The following specification requirements apply to the Retrofit module only. All general specifications apply unless specifically superseded in this section.
2. Retrofit modules can be manufactured under this specification for the following faces:
  - a. 12 inch (300 mm) circular, multi-section
  - b. 12 inch (300 mm) arrow, multi-section
3. Each Retrofit module shall be designed to be installed in the doorframe of a standard traffic signal housing. The Retrofit module shall be sealed in the doorframe with a one-piece EPDM (ethylene propylene rubber) gasket.
4. The maximum weight of a Retrofit module shall be 4 lbs. (1.8 kg).
5. Each Retrofit module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.
6. Electrical conductors for modules, including Retrofit modules, shall be 39.4 inches (1m) in length, with quick disconnect terminals attached.
7. The lens of the Retrofit module shall be integral to the unit, shall be convex with a smooth outer surface and made of plastic or of glass.

(e) The following specification requirements apply to the 12 inch (300 mm) arrow module only. All general specifications apply unless specifically superseded in this section.

1. The arrow module shall meet specifications stated in Section 9.01 of the Equipment and Material Standards of the Institute of Transportation Engineers (November 1998) [ITE Standards], Chapter 2 (Vehicle Traffic Control Signal Heads) or applicable successor ITE specifications for arrow indications.
2. The LEDs arrow indication shall be a solid display with a minimum of three (3) outlining rows of LEDs and at least one (1) fill row of LEDs.

(f) The following specification requirement applies to the 12 inch (300 mm) programmed visibility (PV)

module only. All general specifications apply unless specifically superseded in this section.

1. The LED module shall be a module designed and constructed to be installed in a programmed visibility (PV) signal housing without modification to the housing.

**Basis of Payment.**

Add the following to the first paragraph of Article 880.04 of the Standard Specifications:

The price shall include furnishing the equipment described above, all mounting hardware and installing them in satisfactory operating condition.

Revise the second paragraph of Article 880.04 of the Standard Specifications to read:

If the work consists of retrofitting an existing polycarbonate traffic signal head with light emitting diodes (LEDs), it will be paid for as a SIGNAL HEAD, LED, RETROFIT, of the type specified, and of the particular kind of material, when specified. Price shall be payment in full for removal of the existing module, furnishing the equipment described above including LED modules, all mounting hardware, and installing them in satisfactory operating condition. The type specified will indicate the number of signal faces, the number of signal sections in each signal face and the method of mounting.

**LIGHT EMITTING DIODE (LED) PEDESTRIAN SIGNAL HEAD**

Effective: May 22, 2002

Revised: July 1, 2015

881.01TS

Add the following to the third paragraph of Article 881.03 of the Standard Specifications:

No mixing of different types of pedestrian traffic signals or displays will be permitted.

Add the following to Article 881.03 of the Standard Specifications:

(a) Pedestrian Countdown Signal Heads.

- (1) Pedestrian Countdown Signal Heads shall not be installed at signalized intersections where traffic signals and railroad warning devices are interconnected.
- (2) Pedestrian Countdown Signal Heads shall be 16 inch (406mm) x 18 inch (457mm), for single units with glossy yellow or black polycarbonate housings. All pedestrian head housings shall be the same color (yellow or black) at the intersection. For new signalized intersections and existing signalized intersections where all pedestrian heads are being replaced, the proposed head housings shall be black. Where only selected heads are being replaced, the proposed head housing color (yellow or black) shall match existing head housings. Connecting hardware and mounting brackets shall be polycarbonate (black). A corrosion resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on.
- (3) Each pedestrian signal LED module shall be fully MUTCD compliant and shall consist of double overlay message combining full LED symbols of an Upraised Hand and a Walking Person. "Egg Crate" type sun shields are not permitted. Numerals shall measure 9 inches (229mm) in height and easily identified from a distance of 120 feet (36.6m).

**Materials.**

Add the following to Article 1078.02 of the Standard Specifications:

General.

1. The module shall operate in one mode: Clearance Cycle Countdown Mode Only. The countdown module shall display actual controller programmed clearance cycle and shall start counting when the flashing clearance signal turns on and shall countdown to "0" and turn off when the steady Upraised Hand (symbolizing Don't Walk) signal turns on. Module shall not have user accessible switches or controls for modification of cycle.
2. At power on, the module shall enter a single automatic learning cycle. During the automatic learning cycle, the countdown display shall remain dark.

3. The module shall re-program itself if it detects any increase or decrease of Pedestrian Timing. The counting unit will go blank once a change is detected and then take one complete pedestrian cycle (with no counter during this cycle) to adjust its buffer timer.
4. If the controller preempts during the Walking Person (symbolizing Walk), the countdown will follow the controller's directions and will adjust from Walking Person to flashing Upraised Hand. It will start to count down during the flashing Upraised Hand.
5. If the controller preempts during the flashing Upraised Hand, the countdown will continue to count down without interruption.
6. The next cycle, following the preemption event, shall use the correct, initially programmed values.
7. If the controller output displays Upraised Hand steady condition and the unit has not arrived to zero or if both the Upraised Hand and Walking Person are dark for some reason, the unit suspends any timing and the digits will go dark.
8. The digits will go dark for one pedestrian cycle after loss of power of more than 1.5 seconds.
9. The countdown numerals shall be two (2) "7 segment" digits forming the time display utilizing two rows of LEDs.
10. The LED module shall meet the requirements of the Institute of Transportation Engineers (ITE) LED purchase specification, "Pedestrian Traffic Control Signal Indications - Part 2: LED Pedestrian Traffic Signal Modules," or applicable successor ITE specifications, except as modified herein.
11. The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.
12. In the event of a power outage, light output from the LED modules shall cease instantaneously.
13. The LEDs utilized in the modules shall be AlInGaP technology for Portland Orange (Countdown Numerals and Upraised Hand) and GaN technology for Lunar White (Walking Person) indications.
14. The individual LEDs shall be wired such that a catastrophic loss or the failure of one or more LED will not result in the loss of the entire module.

**Basis of Payment.**

Add the following to the first paragraph of Article 881.04 of the Standard Specifications:

The price shall include furnishing the equipment described above, all mounting hardware and installing them in satisfactory operating condition.

Add the following to Article 881.04 of the Standard Specifications:

If the work consists of retrofitting an existing polycarbonate pedestrian signal head and pedestrian countdown signal head with light emitting diodes (LEDs), it will be paid for as a PEDESTRIAN SIGNAL HEAD, LED, RETROFIT, of the type specified, and of the particular kind of material, when specified. Price shall be payment in full for furnishing the equipment described above including LED modules, all mounting hardware, and installing them in satisfactory operating condition.

**TRAFFIC SIGNAL BACKPLATE**

Effective: May 22, 2002

Revised: July 1, 2021

882.01TS

Delete 1<sup>st</sup> sentence of Article 1078.03 of the Standard Specifications and add "All backplates shall be louvered, formed ABS plastic or composite aluminum".

Delete first sentence of the second paragraph of Article 1078.03 of the Standard Specifications and add "The backplate shall be composed of one or two piece.

Delete second sentence of the fourth paragraph of Article 1078.03 the Standard Specifications.

Add the following to the fourth paragraph of Article 1078.03 of the Standard Specifications:

When retro reflective sheeting is specified, it shall be Type ZZ sheeting according to Article 1091.03 and applied in preferred orientation for the maximum angularity according to the vendor's recommendations. The retroreflective sheeting shall be installed under a controlled environment at the vendor/equipment supplier before shipment to the contractor. The formed plastic backplate shall be prepared and cleaned, following recommendations of the retroreflective sheeting manufacturer.



## **DETECTOR LOOP**

Effective: May 22, 2002

Revised: July 1, 2018

886.01TS

### **Procedure.**

A minimum of seven (7) working days prior to the Contractor cutting loops, the Contractor shall mark the proposed loop locations and contact the Area Traffic Signal Maintenance and Operations Engineer (847) 705-4424 to inspect and approve the layout. When preformed detector loops are installed, the Contractor shall have them inspected and approved prior to the pouring of the Portland cement concrete surface, using the same notification process as above.

### **Installation.**

Revise Article 886.04 of the Standard Specifications to read:

Loop detectors shall be installed according to the requirements of the "District One Standard Traffic Signal Design Details." Saw-cuts (homeruns on preformed detector loops) from the loop to the edge of pavement shall be made perpendicular to the edge of pavement when possible in order to minimize the length of the saw-cut (homerun on preformed detector loops) unless directed otherwise by the Engineer or as shown on the plan.

The detector loop cable insulation shall be labeled with the cable specifications.

Each loop detector lead-in wire shall be labeled in the handhole using a water proof tag, from an approved vendor, secured to each wire with nylon ties.

Resistance to ground shall be a minimum of 100 mega-ohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries. Quality readings shall be more than 5.

- (a) Type I. All loops installed in new asphalt pavement shall be installed in the binder course and not in the surface course. The edge of pavement, curb and handhole shall be cut with a 1/4 inch (6.3 mm) deep x 4 inches (100 mm) saw cut to mark location of each loop cable.
- (b) Loop sealant shall be two-component thixotropic chemically cured polyurethane from an approved vendor. The sealant shall be installed 1/8 inch (3 mm) below the pavement surface. If installed above the surface the excess shall be removed immediately.
- (c) Preformed. This work shall consist of furnishing and installing a rubberized or cross linked polyethylene heat resistant preformed traffic signal loop in accordance with the Standard Specifications, except for the following:
- (d) Preformed detector loops shall be installed in the sub-base under the Portland cement concrete pavement. Loop lead-ins shall be extended to a temporary protective enclosure near the proposed handhole location. The protective enclosure shall provide sufficient protection from other construction activities and may be buried for additional protection.

- (e) Handholes shall be placed next to the shoulder or back of curb when preformed detector loops enter the handhole. CNC, included in this pay item, shall be used to protect the preformed lead-ins from back of curb to the handhole.
- (f) Preformed detector loops shall be factory assembled with ends capped and sealed against moisture and other contaminants. The loop configurations and homerun lengths shall be assembled for the specific application. The loop and homerun shall be constructed using 5/8 inch (16 mm) outside diameter (minimum), 3/8 inch (9.5 mm) inside diameter (minimum) Class A oil resistant synthetic cord reinforced hydraulic hose with 250 psi (1,720 kPa) internal pressure rating or a similarly sized XLPE cable jacket. Hose for the loop and homerun assembly shall be one continuous piece. No joints or splices shall be allowed in the hose except where necessary to connect homeruns to the loops. This will provide maximum wire protection and loop system strength. Hose tee connections shall be heavy duty high temperature synthetic rubber. The tee shall be of proper size to attach directly to the hose, minimizing glue joints. The tee shall have the same flexible properties as the hose to insure that the whole assembly can conform to pavement movement and shifting without cracking or breaking. For XLPE jacketed preformed loops, all splice connections shall be soldered, sealed, and tested before being sealed in a high impact glass impregnated plastic splice enclosure. The wire used shall be #16 THWN stranded copper. The number of turns in the loop shall be application specific. Homerun wire pairs shall be twisted a minimum of eight turns per foot. No wire splices will be allowed in the preformed loop assembly. The loop and homeruns shall be filled and sealed with a flexible sealant to insure complete moisture blockage and further protect the wire. The preformed loops shall be constructed to allow a minimum of 6.5 feet of extra cable in the handhole.

**Method of Measurement.**

Add the following to Article 886.05 of the Standard Specifications:

Preformed detector loops will be measured along the detector loop embedded in the pavement, rather than the actual length of the wire. Detector loop measurements shall include the saw cut and the length of the detector loop wire to the edge of pavement. The detector loop wire, including all necessary connections for proper operations, from the edge of pavement to the handhole, shall be included in the price of the detector loop. CNC, trench and backfill, and drilling of pavement or handholes shall be included in detector loop quantities.

**Basis of Payment.**

This work shall be paid for at the contract unit price per foot (meter) for DETECTOR LOOP, TYPE I or PREFORMED DETECTOR LOOP as specified in the plans, which price shall be payment in full for furnishing and installing the detector loop and all related connections for proper operation.

**EMERGENCY VEHICLE PRIORITY SYSTEM**

Effective: May 22, 2002

Revised: July 1, 2015

887.01TS

Revise Section 887 of the Standard Specifications to read:

It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle pre-emption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency.

All new installations shall be equipped with Confirmation Beacons as shown on the "District One Standard Traffic Signal Design Details." The Confirmation Beacon shall consist of a 6 watt Par 38 LED flood lamp with a 30 degree light spread, or a 7 watt Par 30 LED flood lamp with a 15 degree or greater spread, maximum 7 watt energy consumption at 120V, and a 2,000 hour warranty for each direction of pre-emption. The lamp shall have an adjustable mount with a weatherproof enclosure for cable splicing. All hardware shall be cast aluminum or stainless steel. Holes drilled into signal poles, mast arms, or posts shall require rubber grommets. In order to maintain uniformity between communities, the confirmation beacons shall indicate when the control equipment receives the pre-emption signal. The pre-emption movement shall be signaled by a flashing indication at the rate specified by Section 4L.01 of the "Manual on Uniform Traffic Control Devices," and other applicable sections of future editions. The stopped pre-empted movements shall be signaled by a continuous indication.

All light operated systems shall include security and transit preemption software and operate at a uniform rate of 14.035 Hz  $\pm$ 0.002, or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the District.

This item shall include any required modifications to an existing traffic signal controller as a result of the addition of the EMERGENCY VEHICLE PRIORITY SYSTEM.

**Basis of Payment.**

The work shall be paid for at the contract unit price each for furnishing and installing LIGHT DETECTOR and LIGHT DETECTOR AMPLIFIER. Furnishing and installing the confirmation beacon shall be included in the cost of the Light Detector. Any required modifications to the traffic signal controller shall be included in the cost of the LIGHT DETECTOR AMPLIFIER. The preemption detector amplifier shall be paid for on a basis of (1) one each per intersection controller and shall provide operation for all movements required in the pre-emption phase sequence.

## **TEMPORARY TRAFFIC SIGNAL INSTALLATION**

Effective: May 22, 2002

Revised: January 1, 2017

890.01TS

Revise Section 890 of the Standard Specifications to read:

### **Description.**

This work shall consist of furnishing, installing, maintaining, and removing a temporary traffic signal installation as shown on the plans, including but not limited to temporary signal heads, emergency vehicle priority systems, interconnect, vehicle detectors, uninterruptable power supply, and signing. Temporary traffic signal controllers and cabinets interconnected to railroad traffic control devices shall be new. When temporary traffic signals will be operating within a county or local agency Traffic Management System, the equipment must be NTCIP compliant and compatible with the current operating requirements of the Traffic Management System.

### **General.**

Only an approved controller equipment supplier will be allowed to assemble temporary traffic signal and railroad traffic signal cabinet. Traffic signal inspection and TURN-ON shall be according to 800.01TS TRAFFIC SIGNAL GENERAL REQUIREMENTS special provision.

### **Construction Requirements.**

#### **(a) Controllers.**

1. Only controllers supplied by one of the District approved closed loop equipment supplier will be approved for use at temporary signal locations. All controllers used for temporary traffic signals shall be fully actuated NEMA microprocessor based with RS232 data entry ports compatible with existing monitoring software approved by IDOT District 1, installed in NEMA TS2 cabinets with 8 phase back panels, capable of supplying 255 seconds of cycle length and individual phase length settings up to 99 seconds. On projects with one lane open and two way traffic flow, such as bridge deck repairs, the temporary signal controller shall be capable of providing an adjustable all red clearance setting of up to 30 seconds in length. All controllers used for temporary traffic signals shall meet or exceed the requirements of Section 857 of the Standard Specifications with regards to internal time base coordination and preemption. All railroad interconnected temporary controllers and cabinets shall be new and shall satisfy the requirements of Article 857.02 of the Standard Specifications and as modified herein.
2. Only control equipment, including controller cabinet and peripheral equipment, supplied by one of the District approved closed loop equipment suppliers will be approved for use at temporary traffic signal locations. All control equipment for the temporary traffic signal(s) shall be furnished by the Contractor unless otherwise stated in the plans. On projects with multiple temporary traffic signal installations, all controllers shall be the same manufacturer brand and model number with the latest version software installed at the time of the signal TURN-ON.

- (b) Cabinets. All temporary traffic signal cabinets shall have a closed bottom made of aluminum alloy. The bottom shall be sealed along the entire perimeter of the cabinet base to ensure a water, dust and insect-proof seal. The bottom shall provide a minimum of two (2) 4 inch (100 mm) diameter holes to run the electric cables through. The 4 inch (100 mm) diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.
- (c) Grounding. Grounding shall be provided for the temporary traffic signal cabinet meeting or exceeding the applicable portions of the National Electrical Code, Section 806 of the Standard Specifications and shall meet the requirements of the 806.01TS GROUNDING OF TRAFFIC SIGNAL SYSTEMS special provision.
- (d) Traffic Signal Heads. All traffic signal sections shall be 12 inches (300 mm). Pedestrian signal sections shall be 16 inch (406mm) x 18 inch (457mm). Traffic signal sections shall be LED with expandable view, unless otherwise approved by the Engineer. Pedestrian signal heads shall be Light Emitting Diode (LED) Pedestrian Countdown Signal Heads except when a temporary traffic signal is installed at an intersection interconnected with a railroad grade crossing. When a temporary traffic signal is installed at an intersection interconnected with a railroad grade crossing, Light Emitting Diode (LED) Pedestrian Signal Heads shall be furnished. The temporary traffic signal heads shall be placed as indicated on the temporary traffic signal plan or as directed by the Engineer. If no traffic staging is in place or will not be staged on the day of the turn on, the temporary traffic signal shall have the signal head displays, signal head placements and controller phasing match the existing traffic signal or shall be as directed by the engineer. The Contractor shall furnish enough extra cable length to relocate heads to any position on the span wire or at locations illustrated on the plans for construction staging. The temporary traffic signal shall remain in operation during all signal head relocations. Each temporary traffic signal head shall have its own cable from the controller cabinet to the signal head.
- (e) Interconnect.
1. Temporary traffic signal interconnect shall be provided using fiber optic cable or wireless interconnect technology as specified in the plans. The Contractor may request, in writing, to substitute the fiber optic temporary interconnect indicated in the contract documents with a wireless interconnect. The Contractor must provide assurances that the radio device will operate properly at all times and during all construction staging. If approved for use by the Engineer, the Contractor shall submit marked-up traffic signal plans indicating locations of radios and antennas and installation details. If wireless interconnect is used, and in the opinion of the engineer, it is not viable, or if it fails during testing or operations, the Contractor shall be responsible for installing all necessary poles, fiber optic cable, and other infrastructure for providing temporary fiber optic interconnect at no cost to the contract.
  2. The existing system interconnect and phone lines are to be maintained as part of the Temporary Traffic Signal Installation specified for on the plan. The interconnect,

including any required fiber splices and terminations, shall be installed into the temporary controller cabinet as per the notes or details on the plans. All labor and equipment required to install and maintain the existing interconnect as part of the Temporary Traffic Signal Installation shall be included in the cost of TEMPORARY TRAFFIC SIGNAL INSTALLATION. When shown in the plans, temporary traffic signal interconnect equipment shall be furnished and installed. The temporary traffic signal interconnect shall maintain interconnect communications throughout the entire signal system for the duration of the project. Any temporary signal within an existing closed loop traffic signal system shall be interconnected to that system using similar brand control equipment at no additional cost to the contract.

3. Temporary wireless interconnect. The radio interconnect system shall be compatible with Eagle or Econolite controller closed loop systems. This work shall include all temporary wireless interconnect components, at the adjacent existing traffic signal(s) to provide a completely operational closed loop system. This work shall include all materials, labor and testing to provide the completely operational closed loop system as shown on the plans. The radio interconnect system shall include the following components:

- a. Rack or Shelf Mounted RS-232 Frequency Hopping Spread Spectrum (FHSS) Radio
- b. Software for Radio Configuration (Configure Frequency and Hopping Patterns)
- c. Antennas (Omni Directional or Yagi Directional)
- d. Antenna Cables, LMR400, Low Loss. Max. 100-ft from controller cabinet to antenna
- e. Brackets, Mounting Hardware, and Accessories Required for Installation
- f. RS232 Data Cable for Connection from the radio to the local or master controller
- g. All other components required for a fully functional radio interconnect system

All controller cabinet modifications and other modifications to existing equipment that are required for the installation of the radio interconnect system components shall be included in the cost of TEMPORARY TRAFFIC SIGNAL INSTALLATION.

The radio interconnect system may operate at 900Mhz (902-928) or 2.4 Ghz depending on the results of a site survey. The telemetry shall have an acceptable rate of transmission errors, time outs, etc. comparable to that of a hardwire system.

The proposed or existing master controller and telemetry module shall be configured for use with the radio interconnect at a minimum rate of 9600 baud.

The radio interconnect system shall include all other components required for a complete and fully functional telemetry system and shall be installed in accordance to the vendors recommendations.

- (f) Emergency Vehicle Pre-Emption. All emergency vehicle preemption equipment (light

detectors, light detector amplifiers, confirmation beacons, etc.) as shown on the temporary traffic signal plans shall be provided by the Contractor. It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle preemption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency. All light operated systems shall operate at a uniform rate of 14.035 hz  $\pm$ 0.002, or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the District. All labor and material required to install and maintain the Emergency Vehicle Preemption installation shall be included in the item Temporary Traffic Signal Installation.

- (g) Vehicle Detection. All temporary traffic signal installations shall have vehicular detection installed at all approaches of the intersection and as directed by the Engineer. Pedestrian push buttons shall be provided for all pedestrian signal heads/phases as directed by the Engineer. Microwave vehicle sensors or video vehicle detection system shall be approved by IDOT prior to Contractor furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the microwave vehicle sensor or video vehicle detection system in accordance to the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the microwave vehicle sensor or video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project. An equipment supplier shall be present and assist the contractor in setting up and maintaining the microwave vehicle sensor or video vehicle detection system. An in-cabinet video monitor shall be provided with all video vehicle detection systems and shall be included in the item Temporary Traffic Signal Installation.
- (h) Uninterruptable Power Supply. All temporary traffic signal installations shall have Uninterruptable Power Supply (UPS). The UPS cabinet shall be mounted to the temporary traffic signal cabinet and shall be according to the applicable portions of Section 862 of the Standard Specifications and as modified in 862.01TS UNITERRUPTABLE POWER SUPPLY, SPECIAL Special Provision.
- (i) Signs. All existing street name and intersection regulatory signs shall be removed from existing poles and relocated to the temporary signal span wire. If new mast arm assembly and pole(s) and posts are specified for the permanent signals, the signs shall be relocated to the new equipment at no extra cost. Any intersection regulatory signs that are required for the temporary traffic signal shall be provided as shown on the plans or as directed by the Engineer. Relocation, removing, bagging and installing the regulatory signs for the various construction stages shall be provided as shown on the plans or as directed by the Engineer. If Illuminated Street Name Signs exist they shall be taken down and stored by the contractor and reflecting street name signs shall be installed on the temporary traffic signal installation.
- (j) Energy Charges. The electrical utility energy charges for the operation of the temporary traffic signal installation shall be paid for by others if the installation replaces an existing signal. Otherwise charges shall be paid for under 109.05 of the Standard Specifications.

- (k) Maintenance. Maintenance shall meet the requirements of the Standard Specifications and 850.01TS MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION Special Provisions. Maintenance of temporary signals and of the existing signals shall be included in the cost of the TEMPORARY TRAFFIC SIGNAL INSTALLATION pay item. When temporary traffic signals are to be installed at locations where existing signals are presently operating, the Contractor shall be fully responsible for the maintenance of the existing signal installation as soon as he begins any physical work on the Contract or any portion thereof. In addition, a minimum of seven (7) days prior to assuming maintenance of the existing traffic signal installation(s) under this Contract, the Contractor shall request that the Resident Engineer contact the Bureau of Traffic Operations (847) 705-4424 for an inspection of the installation(s).
- (l) Temporary Traffic Signals for Bridge Projects. Temporary Traffic Signals for bridge projects shall follow the State Standards, Standard Specifications, Special Provisions and any plans for Bridge Temporary Traffic Signals included in the plans. The installation shall meet the Standard Specifications and all other requirements in this TEMPORARY TRAFFIC SIGNAL INSTALLATION specification. In addition all electric cable shall be aerially suspended, at a minimum height of 18 feet (5.5m) on temporary wood poles (Class 5 or better) of 45 feet (13.7 m) minimum height. The signal heads shall be span wire mounted or bracket mounted to the wood pole or as directed by the Engineer. The Controller cabinet shall be mounted to the wood pole as shown in the plans, or as directed by the Engineer. Microwave vehicle sensors or video vehicle detection system may be used in place of detector loops as approved by the Engineer.
- (m) Temporary Portable Traffic Signal for Bridge Projects.
1. The controller and cabinet shall be NEMA type designed for NEMA TS2 Type 1 operation. Controller and LED signal displays shall meet the applicable Standard Specifications and all other requirements in this TEMPORARY TRAFFIC SIGNAL INSTALLATION special provision.
  2. Work shall be according to Article 701.18(b) of the Standard Specifications except as noted herein.
  3. General.
    - a. The temporary portable bridge traffic signals shall be trailer-mounted units. The trailer-mounted units shall be set up securely and level. Each unit shall be self-contained and consist of two signal heads. The left signal head shall be mounted on a mast arm capable of extending over the travel lane. Each unit shall contain a solar cell system to facilitate battery charging. There shall be a minimum of 12 days backup reserve battery supply and the units shall be capable of operating with a 120 V power supply from a generator or electrical service.



- b. All signal heads located over the travel lane shall be mounted at a minimum height of 17 feet (5m) from the bottom of the signal back plate to the top of the road surface. All far right signal heads located outside the travel lane shall be mounted at a minimum height of 8 feet (2.5m) from the bottom of the signal back plate to the top of the adjacent travel lane surface.
- c. The long all red intervals for the traffic signal controller shall be adjustable up to 250 seconds in one-second increments.
- d. As an alternative to detector loops, temporary portable bridge traffic signals may be equipped with microwave sensors or other approved methods of vehicle detection and traffic actuation.
- e. All portable traffic signal units shall be interconnected using hardwire communication cable. Radio communication equipment may be used only with the approval of the Engineer. If radio communication is used, a site analysis shall be completed to ensure that there is no interference present that would affect the traffic signal operation. The radio equipment shall meet all applicable FCC requirements.
- f. The temporary portable bridge traffic signal system shall meet the physical display and operational requirements of conventional traffic signals as specified in Part IV and other applicable portions of the currently adopted version of the Manual on Uniform Traffic Control Devices (MUTCD) and the Illinois MUTCD. The signal system shall be designed to continuously operate over an ambient temperature range between -30 °F (-34 °C) and 120 °F (48 °C). When not being utilized to inform and direct traffic, portable signals shall be treated as non-operating equipment according to Article 701.11.

**Basis of Payment.**

This work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL INSTALLATION, TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION, or TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNAL INSTALLATION, the price of which shall include all costs for the modifications required for traffic staging, changes in signal phasing as required in the Contract plans, microwave vehicle sensors, video vehicle detection system, any maintenance or adjustment to the microwave vehicle sensors/video vehicle detection system, the temporary wireless interconnect system, temporary fiber optic interconnect system, all material required, the installation and complete removal of the temporary traffic signal, and any changes required by the Engineer. Each intersection will be paid for separately.

**REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT**

Effective: May 22, 2002

Revised: July 1, 2015

895.02TS

Add the following to Article 895.05 of the Standard Specifications:

The traffic signal equipment which is to be removed and is to become the property of the Contractor shall be disposed of outside the right-of-way at the Contractor's expense.

All equipment to be returned to the State shall be delivered by the Contractor to the State's Traffic Signal Maintenance Contractor's main facility. The Contractor shall contact the State's Electrical Maintenance Contractor to schedule an appointment to deliver the equipment. No equipment will be accepted without a prior appointment. All equipment shall be delivered within 30 days of removing it from the traffic signal installation. The Contractor shall provide one hard copy and one electronic file of a list of equipment that is to remain the property of the State, including model and serial numbers, where applicable. The Contractor shall also provide a copy of the Contract plan or special provision showing the quantities and type of equipment. Controllers and peripheral equipment from the same location shall be boxed together (equipment from different locations may not be mixed) and all boxes and controller cabinets shall be clearly marked or labeled with the location from which they were removed. If equipment is not returned according to these requirements, it will be rejected by the State's Electrical Maintenance Contractor. The Contractor shall be responsible for the condition of the traffic signal equipment from the time Contractor takes maintenance of the signal installation until the acceptance of a receipt drawn by the State's Electrical Maintenance Contractor indicating the items have been returned in good condition.

The Contractor shall safely store and arrange for pick up or delivery of all equipment to be returned to agencies other than the State. The Contractor shall package the equipment and provide all necessary documentation as stated above.

Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of these Specifications at no cost to the contract.

**REMOVE EXISTING DOUBLE HANDHOLE**

**Description:** This work shall consist of the removal of existing double handholes at locations shown on the plans or as directed by the Engineer.

**General:** The frame and cover of an existing double handhole shall be broken off of the top section of the handhole wall to a minimum depth of 3 ft below the surrounding grade, or as specified, backfilled with approved material, and the surface reconstructed to match the adjoining area. The concrete debris shall be disposed of outside the right-of-way, and the frame and cover disposed of as directed by the Engineer. If the double handhole is located in the sidewalk area, the entire sidewalk square or squares where the double handhole is located shall be replaced with new sidewalk.

**Method of Measurement and Basis of Payment:** This work shall be paid for at the contract unit price EACH for REMOVE EXISTING DOUBLE HANDHOLE, which price shall be payment in full for furnishing all necessary parts, equipment, and labor to remove the existing double handhole to the satisfaction of the Engineer.

**PROPOSED STORM SEWER CONNECTION TO EXISTING STORM SEWER**

**Description.** This work shall consist of connecting a proposed storm sewer to an existing storm sewer by means of constructing a reinforced concrete collar in accordance with Article 542.08 of the Standard Specifications and as designated in the plans. All materials required to construct the concrete collar, including concrete, reinforcement, expansion bolts, and other materials shall be included in the cost of the proposed storm sewer connection.

**Construction Requirements.** Concrete collar widths shall be according to the plans. Any existing or proposed storm sewers damaged by the contractor during construction of the connection shall be replaced by the contractor at no additional cost to the contract.

**Method of Measurement.** This work will be measured for payment, in place, in units of EACH connection installed as specified herein regardless of pipe diameter.

**Basis of Payment.** This work will be paid for at the contract unit price per EACH for PROPOSED STORM SEWER CONNECTION TO EXISTING STORM SEWER.

**PROPOSED STORM SEWER CONNECTION TO EXISTING MANHOLE**

**Description.** Work under this item shall be performed according to Section 602 of the Standard Specifications, except as herein modified.

Where new sewer pipes are to be connected to existing manholes, opening holes of the proper size and at the proper location shall be cored into the existing manholes. Other methods in lieu of coring may be used per the Engineer's approval.

If the manhole cannot satisfactorily be cored due to its condition, a hole shall be cut into the existing manhole. The sewer pipe shall be inserted into the hole cut in the manhole so that the end of the pipe will be flush with the inside of the manhole. The pipe shall be made smooth and water-tight with mortar.

**Method of Measurement.** This work will be measured for payment in units of each, regardless of pipe diameter or depth of installation.

**Basis of Payment.** This work will be paid for at the contract unit price per each for PROPOSED STORM SEWER CONNECTION TO EXISTING MANHOLE. The price shall include all labor, excavation, materials and equipment necessary for making the connection complete, including cutting the hole in the manhole structure, grouting around the pipe.

**PROPOSED MANHOLE/CATCH BASIN CONNECTION OVER EXISTING STORM SEWER**

**Description.** This work shall consist of connecting an existing storm sewer to a proposed manhole, catch basin, or other storm water drainage structure. All materials required to construct the connection, including concrete, reinforcement, gaskets, and other materials shall be included in the cost of the proposed storm sewer connection.

**Construction Requirements.** Flow shall be maintained during construction. The hole in the catch basin or manhole may be precast or drilled on site as approved by the Engineer, and must be 3" minimum to 6" maximum larger than the outside diameter of the existing storm sewer. The elevation of the existing storm sewer shall be maintained. It is up to the contractor to furnish any details and drawings necessary to construct the connection, including "doghouse" construction if applicable, to be approved by the Engineer. The connection may be completed using rubber or elastomeric boots per ASTM C-923. Concrete bonding agent must be applied to all interfaces of precast concrete with cast-in-place concrete. Concrete strength shall be minimum 4000 PSI at 28 days using non-shrink mix. The contractor shall verify the completed connection is a watertight seal. Any portion of an existing storm sewer or proposed drainage structure damaged by the contractor during construction of the connection shall be replaced by the contractor at no additional cost to the contract.

**Method of Measurement.** This work will be measured for payment, in place, in units of EACH connection installed as specified herein.

**Basis of Payment.** This work will be paid for at the contract unit price per EACH for PROPOSED MANHOLE/CATCH BASIN CONNECTION OVER EXISTING STORM SEWER.

**REMOVE EXISTING FLARED END SECTION**

**Description.** This work shall consist of the complete removal of existing flared end sections.

**Disposal of Material.** Flared end sections shall be disposed of according to Article 202.03 of the Standard Specifications.

**Basis of Payment.** This work will be paid for at the contract unit price per each for REMOVE EXISTING FLARED END SECTION.

**EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C**

Effective: January 1, 2013

Revised: July 1, 2015

873.03TS

This work shall consist of furnishing and installing lead-in cable for light detectors installed at existing and/or proposed traffic signal installations as part of an emergency vehicle priority system. The work includes installation of the lead-in cables in existing and/or new conduit. The electric cable shall be shielded and have (3) stranded conductors, colored blue, orange, and yellow with a stranded tinned copper drain wire. The cable shall meet the requirements of the vendor of the Emergency Vehicle Priority System Equipment.

**Basis of Payment.** This work will be paid for at the contract unit price per foot for EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C, which price shall be payment in full for furnishing, installing and making all electrical connections necessary for proper operations.

**WATER VALVE BOXES TO BE ABANDONED**

**Description.** This work shall consist of abandoning valve boxes accordance with Section 605 of the Standard Specifications, as shown on the plans and as designated by the Engineer.

The Contractor shall remove the top section of the existing valve box to an elevation of at least 3 feet below the existing ground and fill the valve box with compacted sand or flowable fill. In paved areas, the void above the abandoned structure shall be backfilled with TRENCH BACKFILL to the top of the subgrade and CLASS D PATCHES, of the type as directed by the Engineer, which shall be paid for separately. In unpaved areas, the void above the abandoned valve box shall be filled with suitable fill and a minimum of six (6") inches of topsoil and restored with SODDING, SALT TOLERANT. Topsoil & restoration operations of abandoned valve boxes in unpaved areas shall be measured separately. The backfilling of abandoned valve boxes in unpaved areas shall not be measured separately but shall be included in the cost of WATER VALVE BOXES TO BE ABANDONED.

**Basis of Payment.** The work specified above shall be paid for at the contract unit price each for WATER VALVE BOXES TO BE ABANDONED, which shall include all labor, equipment and material necessary to complete the work as specified herein.

**WASHOUT BASIN**

**Description.** This work shall consist of the construction, maintaining, and removal of a concrete washout basin for concrete trucks and other construction vehicles in accordance with the plans and details and as specified herein.

The Contractor shall install a sufficient number of washout basins at the locations indicated on the plans or as depicted by the Engineer. Contractor shall maintain concrete washout facilities including the removal and disposal of hardened concrete and/or slurry and returning the facility to a functional condition. Washout Basins shall be cleaned or reconstructed in a new area once the washout becomes two-thirds (2/3) full. If the contractor installs a Straw Bale Concrete Washout Facility, the contractor shall stake each straw bale in place using two (2) 2"x2"x4" wooden stakes.

**Basis of Payment.** This work shall be paid for at the contract lump sum unit price for WASHOUT BASIN which price shall include the materials, equipment, and labor to furnish, install, maintain and remove washout basins as specified herein.

### **STEEL CASING PIPE, BORED AND JACKED**

**Description.** This work shall consist of auguring and/or jacking steel casing pipe at the location as shown on the plans and as directed by the Engineer.

**Materials.** Casing pipe and joints shall be made of metal, and of leakproof construction. Casings shall be capable of withstanding the loads superimposed upon them. Steel pipe shall have minimum yield strength of 35,000 pounds per square inch. All casing pipe shall be manufactured of new billet steel, cylindrical, with smooth bituminous coated walls inside and outside. Steel casing pipe shall conform to ASTM A53 Grade B, ASTM A139 Grade B, or pipe fabricated in accordance with AWWA C200 using ASTM A36 steel.

**Construction Requirements.** Steel casing pipe shall be installed by boring/auguring and/or jacking into place and shall include excavation sheeting/bracing, dewatering, pumping, jacking, welding, backfilling and compacting as required for the steel casing pipe installation. The auger/jacking pit shall be to the size and depth required for the installation of the casing pipe. During installation of the steel casing pipe and as additional lengths of steel casing pipe are placed end to end, the ends of the steel casing pipe shall be welded together so that the completed casing forms a continuous length.

The CONTRACTOR shall construct a jacking and receiving pit of sufficient size to accommodate a backstop, jacks, pushing frame and casing pipe to be jacked. The pit shall have guide rails or timbers to keep the casing pipe in alignment and on grade. A push frame shall be provided to evenly distribute the jacking pressure to protect the ends of the casing pipe being jacked. A minimum of two hydraulic jacks shall be used. All trench backfill required to backfill the pits will not be paid for separately but shall be included in the cost for STEEL CASING PIPE, BORED AND JACKED.

If the proposed auger/receiving pits or casing is to be constructed within rock, all rock excavation shall be paid for separately. The cost for rock excavation shall include all required rock cutting heads and additional equipment required to bore and jack the steel casing through rock.

The casing pipe shall be fitted with a hardened steel cutting edge. The casing pipe shall be jacked on an upgrade slope, if possible, to facilitate drainage. All casing shall be on site before starting jacking. The casing pipe shall be pushed into place as the soil is excavated from the inside of the pipe. The excavation shall not precede the leading edge of the casing unless it is necessary to remove a large obstruction. Once the jacking operation is started, it shall be continued without interruption until completion. The welded joints between sections of the casing pipe shall be capable of resisting all jacking stresses. The casing pipe in its final position shall be straight and true in alignment and grade. There shall be no space between the earth and the outside of the casing. If it is necessary to over excavate, the location shall be identified and pressure grouted after the casing is in place. The steel casing shall be installed with grout ports at spacing approved by the Engineer.

Water main pipe (carrier pipe) shall be in accordance with the DUCTILE IRON WATER MAIN Special Provision herein.

The water main (carrier pipe) shall be provided with a carrier pipe support system to position the carrier pipe at the indicated elevations within the casing. The carrier pipe support system shall be Powerseal

Casing Chock, model 4810, stainless steel spacers consisting of 4 gauge, type 304 stainless steel shells, PVC liner, high molecular weight polymer runners, and stainless steel bolts and lock nuts. A minimum of 3 spacers shall be provided per carrier pipe length, on 6' centers.

Once the carrier pipe has been installed and pressure tested, the annular space between the carrier pipe and casing pipe at both ends shall be sealed. The end seals shall be constructed utilizing concrete brick laid lengthwise with mortar or premanufactured rubber end seals made specifically for this purpose.

The carrier pipe shall be installed by pushing and pulling it into place in such a manner that there is no opportunity for a joint to be opened. All joints shall be restrained.

The carrier pipe support system and all additional work to install the ductile iron water main in the casing shall be included in the cost of this item. The ductile iron water main shall be paid for separately as DUCTILE IRON WATER MAIN, of the size specified.

**Measurement and Payment.** This work will be measured and paid for at the contract unit price per foot for STEEL CASING PIPE, BORED AND JACKED, of the casing diameter specified which shall include all material, jacking and receiving pits, auger/boring/jacking equipment, trench backfill, pit shoring equipment and all other items necessary to complete the work as specified. All ROCK EXCAVATION required for pit excavation and steel casing installation shall be paid for separately.

### **TEMPORARY PATCHING**

**Description.** This work shall consist of constructing temporary asphalt surface patches above water main trench patches and proposed widening areas as directed by the Engineer to facilitate traffic staging prior to the final resurfacing. The temporary patch shall be installed to a depth of at least 2 ½" inches. The Contractor shall use HMA Binder Course, IL-19.0. The number of lifts required to place the material will be determined in the field by the Engineer. All work shall be performed in accordance with Section 355 or 406 of the Standard Specifications.

TEMPORARY PATCHING shall be placed at locations directed by the Engineer, as needed to open lanes to traffic or access to adjacent properties.

This work shall include removal of any temporary stone as necessary to place the temporary pavement patch. The removal of the patch shall be measured and paid for as HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH.

The existing pavement shall be saw cut prior to the installation of the patch.

**Method of Measurement and Basis of Payment.** This work will be measured and paid for at the contract unit price per square yard for TEMPORARY PATCHING.



**SANITARY SEWER REMOVAL**

**Description.** This work shall consist of the removal of existing sewers, of the diameter specified, that are in direct conflict with the proposed improvements.

Existing sewers shall be removed only as directed by the Engineer. Excavated pipe material shall be disposed of by the Contractor in accordance with Article 202.03 of the Standard Specifications.

Pumping access points shall be at the proposed excavation locations.

Trenches resulting from the removal of sewers shall be backfilled in accordance with the applicable requirements of Article 550.07. Backfill of removal trenches (including Trench Backfill) shall be included in this item.

**Basis of Payment.** All labor, materials and equipment necessary to complete the work as specified for SANITARY SEWER REMOVAL, of the diameter specified shall not be paid for separately but shall be included in the bid price for the installation of the proposed items of work.

**ABANDON EXISTING SANITARY SEWERS**

**Description.** This work shall consist of the abandonment of portions of existing sewer pipes as shown on the plans and as directed by the Engineer to construct the proposed improvements.

Sewers to be abandoned shall be plugged at both ends with a minimum of two (2) feet of non-shrink concrete/mortar plugs to the satisfaction of the Engineer. Pumping access points shall be at the proposed excavation locations.

**Basis of Payment.** All labor, materials and equipment necessary to complete the work as specified for ABANDON EXISTING SANITARY SEWERS are not to be paid for separately but shall be included in the bid price for the installation of the proposed sanitary sewer.

**VALVE VAULTS TO BE ABANDONED**

**Description.** This work shall consist of abandoning valve vault structures in accordance with Section 605 of the Standard Specifications, as shown on the plans and as designated by the Engineer.

All abandoned structure penetrations shall be plugged at both ends with a minimum of two (2) feet-long non-shrink concrete/mortar plugs to the satisfaction of the Engineer.

The Contractor shall remove the valve, frame and grate or lid, adjusting rings and cone section of the existing structure and fill the structure with compacted sand or flowable fill. The valves and frames and grates or lids shall be delivered to the City Public Works building upon request of the same. Otherwise, they shall be disposed of by the Contractor. The ends of pipes where valves have been removed shall be plugged at both ends with a minimum of two (2) feet-long non-shrink concrete/mortar plugs to the satisfaction of the Engineer.

In paved areas, the void above the abandoned structure shall be backfilled with TRENCH BACKFILL to the top of the subgrade and CLASS D PATCHES, of the type specified as directed by the Engineer, which shall be paid for separately. In unpaved areas, the void above the abandoned structure shall be filled suitable fill and a minimum of six (6") inches of topsoil and restored SODDING, SALT TOLERANT. Topsoil & restoration operations of abandoned valve vaults in unpaved areas shall be measured separately and paid for in accordance with SODDING, SALT TOLERANT and TOPSOIL EXCAVATION AND PLACEMENT. The backfilling of abandoned valve vaults in unpaved areas shall not be measured separately, but shall be included in the cost of VALVE VAULTS TO BE ABANDONED

**Basis of Payment.** The work specified above shall be paid for at the contract unit price each for VALVE VAULTS TO BE ABANDONED, which shall include all labor, equipment and material necessary to provide complete the work.

**JUNCTION CHAMBER**

**Description.** This work shall consist of all the work and materials required for the construction of the precast concrete JUNCTION CHAMBER in accordance with the plans and as specified herein. All work shall include, but is not limited to, the design, fabrication, transportation, and installation of the structure. The dimensions shown on the plans are measured to the inside face of the chamber walls and are considered to be the minimum dimension required.

**Materials.**

Concrete:	IDOT Section 1020 Class PC (f' c min = 4,500 PSI)
Reinforcing Steel:	ASTM A 706, Grade 60 (IL Modified) See special provision within "REINFORCEMENT BARS"
Frame and Grate:	City Standard or Low Profile as determined necessary by CONTRACTOR
Precast Riser/Slab:	IDOT Standard 602401 and 602601
Steps:	IDOT Standard 602701
Mastic Joint Sealer:	IDOT Section 1056
Loading:	Soil Loads and AASHTO HL-93

**Construction Requirements.** The precast junction chamber(s) shall be constructed in accordance with applicable portions of Sections 540 and 602 of the Standard Specifications. The CONTRACTOR shall be responsible for verifying the size, inverts and locations of the sewers to be connected to the proposed Junction Chamber. A cast in place concrete bench slab shall be poured up to the inverts of the pipes to prevent standing water on the bottom slab. The CONTRACTOR shall take necessary precautions to prevent the chamber from becoming buoyant during construction.

The CONTRACTOR has the option of constructing the junction chamber using cast in place concrete in accordance with IDOT Section 503, with prior permission from the Owner. Cast in place concrete shall be IDOT class SI (f'c min = 3500 PSI).

The CONTRACTOR shall submit calculations and detailed shop drawings that are signed and sealed by a Structural Engineer licensed in the State of Illinois to the ENGINEER for review prior to ordering material or starting construction. The required thickness of the chamber's bottom slab, sidewalls, and top slab, as well as reinforcement details, shall be shown on the shop drawings.

A temporary shoring plan, signed and sealed by a Structural Engineer licensed in the State of Illinois, shall be submitted to the ENGINEER with corresponding calculations and other necessary information, for all temporary shoring required to accommodate safety and other requirements during

construction. Temporary shoring plan shall be approved by the ENGINEER prior to installation of temporary shoring.

All existing storm sewer pipes and culverts that need to be tied into the proposed Junction Chamber shall be done in accordance with Section 602 and all work and material used shall be included in the cost of JUNCTION CHAMBER.

**Basis of Payment.** This work shall be paid for at the contract each price for each JUNCTION CHAMBER, of the number specified, as shown on the plans. All labor and materials associated with excavation, granular backfill, granular subbase, concrete, reinforcement bars, frame and grate, cast iron steps, precast concrete riser and slab, temporary shoring, and any miscellaneous items required for the junction chamber shall not be paid for separately, but shall be included in the unit price for JUNCTION CHAMBER #1, JUNCTION CHAMBER #2, or JUNCTION CHAMBER #3.

**FULL-ACTUATED CONTROLLER AND CABINET**

Effective: January 1, 2002  
Revised: November 1, 2023  
857.02TS

**Description.** This work shall consist of furnishing and installing a traffic actuated solid state digital controller in the controller cabinet of the type specified, meeting the requirements of Section 857 of the Standard Specifications, as modified herein, including malfunction management unit, load switches and flasher relays, and all necessary connections for proper operation.

If the intersection is part of an existing system and/or when specified in the plans, this work shall consist of furnishing and installing a(n) " \_\_\_\_\_ " brand traffic actuated solid state controller.

**Materials.** Add the following to Article 857.02 of the Standard Specifications:

“Controllers shall be Econolite Cobalt or Eagle/Yunex M60 unless specified otherwise on the plans or elsewhere on these specifications. Only controllers supplied by one of the District One approved vendors will be allowed. The controller shall be of the most recent approved model and software version supplied by the vendor at the time of the traffic signal TURN-ON unless specified otherwise on the plans or these specifications. A removable controller data key shall also be provided. Individual load switches shall be provided for each vehicle, pedestrian, and overlap phase. The controller shall prevent phases from being omitted during program changes and after all preemption events and shall inhibit simultaneous display of circular yellow and yellow arrow indications.

For integration into an Advanced Traffic Management System (ATMS) such as Centracs, Tactics, or TransSuite, the controller shall have the latest version of approved NTCIP software installed. For operation prior to integration into an ATMS, the controller shall maintain existing communications.”

Add the following to Article 1074.03 of the Standard Specifications:

(a) (6) Cabinets shall be designed for NEMA TS2 Type 1 operation. All cabinets shall be pre-wired for a minimum of eight (8) phases of vehicular, four (4) phases of pedestrian and four (4) phases of overlap operation.

Revise the second sentence in Article 1074.03 (b) (1) paragraph “a” to read:

“The malfunction management unit shall have a minimum of 16 fully programmable channels.”

Add the following to Article 1074.03 of the Standard Specifications:

- (b) (5) Cabinets – Provide 1/8 in. (3.2 mm) thick unpainted aluminum alloy 5052-H32. The surface shall be smooth, free of marks and scratches. All external hardware shall be stainless steel.
- (b) (6) Controller Harness – Provide a TS2 Type 2 “A” wired harness in addition to the TS2

- Type 1 harness.
- (b) (7) Surge Protection – Shall be a 120VAC Single phase Modular filter Plug-in type, supplied from an approved vendor.
  - (b) (8) BIU – shall be secured by mechanical means.
  - (b) (9) Transfer Relays – Solid state or mechanical flash relays are acceptable.
  - (b) (10) Switch Guards – All switches shall be guarded.
  - (b) (11) Heating – One (1) 200 watt, thermostatically-controlled, electric heater.
  - (b) (12) Lighting – One (1) LED Panel shall be placed inside the cabinet top panel and one (1) LED Panel shall be placed on each side of the pull-out drawer/shelf assembly located beneath the controller support shelf. The LED Panels shall be controlled by a door switch. The LED Panels shall be provided from an approved vendor.
  - (b) (13) The cabinet shall be equipped with a pull-out drawer/shelf assembly. A 1-1/2 in. (38mm) deep drawer shall be provided in the cabinet, mounted directly beneath the controller support shelf. The drawer shall have a hinged top cover and shall be capable of accommodating one (1) complete set of cabinet prints and manuals. This drawer shall support 50 lb (23 kg) in weight when fully extended. The drawer shall open and close smoothly. Drawer dimensions shall make maximum use of available depth offered by the controller shelf and be a minimum of 18 in. (610mm) wide.
  - (b) (14) Plan & Wiring Diagrams – 12 in. x 15 in. (305mm x 406mm) moisture sealed container attached to door.
  - (b) (15) Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle pre-emption and sixteen channels (16) of vehicular operation.
  - (b) (16) Field Wiring Labels – All field wiring shall be labeled.
  - (b) (17) Field Wiring Termination – Approved channel lugs required.
  - (b) (18) Power Panel – Provide a nonconductive shield.
  - (b) (19) Circuit Breaker – The circuit breaker shall be sized for the proposed load but shall not be rated less than 30 amps.
  - (b) (20) Police Door – Provide wiring and termination for plug in manual phase advance switch.

**Basis of Payment.** This work will be paid for at the contract unit price each for FULL-ACTUATED CONTROLLER AND TYPE IV CABINET; FULL-ACTUATED CONTROLLER AND TYPE IV STRETCHED CABINET; FULL-ACTUATED CONTROLLER AND TYPE V CABINET; FULL-ACTUATED CONTROLLER AND TYPE SUPER P CABINET; FULL-ACTUATED CONTROLLER AND TYPE SUPER P STRETCHED CABINET; FULL-ACTUATED CONTROLLER AND TYPE SUPER R CABINET; FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL; FULL-ACTUATED CONTROLLER AND TYPE IV STRETCHED CABINET, SPECIAL; FULL-ACTUATED CONTROLLER AND TYPE V CABINET, SPECIAL; FULL-ACTUATED CONTROLLER AND TYPE SUPER P CABINET (SPECIAL); FULL-ACTUATED CONTROLLER AND TYPE SUPER P STRETCHED CABINET (SPECIAL); FULL-ACTUATED CONTROLLER AND TYPE SUPER R CABINET (SPECIAL).

**SERVICE INSTALLATION (TRAFFIC SIGNALS)**

Effective: May 22, 2002

Revised: June 15, 2016

805.01TS

Revise Section 805 of the Standard Specifications to read:

**Description.**

This work shall consist of all materials and labor required to install, modify, or extend the electric service installation. All installations shall meet the requirements of the "District One Standard Traffic Signal Design Details".

**General.**

The electric service installation shall be the electric service disconnecting means and it shall be identified as suitable for use as service equipment.

The electric utility contact information is noted on the plans and represents the current information at the time of contract preparation. The Contractor must request in writing for service and/or service modification within 10 days of contract award and must follow-up with the electric utility to assure all necessary documents and payment are received by the utility. The Contractor shall forward copies of all correspondence between the contractor and utility company to the Engineer and Area Traffic Signal Maintenance and Operations Engineer. The service agreement and sketch shall be submitted for signature to the IDOT's Traffic Operations Programs Engineer.

**Materials.**

- a. General. The completed control panel shall be constructed in accordance with UL Std. 508A, Industrial Control Panel, and carry the UL label. Wire terminations shall be UL listed.
- b. Enclosures.
  1. Pole Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 4X, unfinished single door design, fabricated from minimum 0.080-inch (2.03 mm) thick Type 5052 H-32 aluminum. Seams shall be continuous welded and ground smooth. Stainless steel screws and clamps shall secure the cover and assure a watertight seal. The cover shall be removable by pulling the continuous stainless steel hinge pin. The cabinet shall have an oil-resistant gasket and a lock kit shall be provided with an internal O-ring in the locking mechanism assuring a watertight and dust-tight seal. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 14-inches (350 mm) high, 9-inches (225 mm) wide and 8-inches (200 mm) in depth is required. The cabinet shall be channel mounted to a wooden utility pole using assemblies recommended by the vendor.
  2. Ground Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 3R unfinished single door design with back panel. The cabinet shall be fabricated from Type 5052

H-32 aluminum with the frame and door 0.125-inch (3.175 mm) thick, the top 0.250-inch (6.350 mm) thick and the bottom 0.500-inch (12.70 mm) thick. Seams shall be continuous welded and ground smooth. The door and door opening shall be double flanged. The door shall be approximately 80% of the front surface, with a full length tamperproof stainless steel .075-inch (1.91 mm) thick hinge bolted to the cabinet with stainless steel carriage bolts and nylocks nuts. The locking mechanism shall be slam-latch type with a keyhole cover. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 40-inches (1000 mm) high, 16-inches (400 mm) wide and 15-inches (375 mm) in depth is required. The cabinet shall be mounted upon a square Type A concrete foundation as indicated on the plans. The foundation is paid for separately.

3. All enclosures shall include a green external power indicator LED light with circuitry as shown in the Electrical Service-Panel Diagram detail sheet. For pole mounted service enclosures, the power indicator light shall be mounted as shown in the detail. For ground mounted enclosures, the power indicator light shall be mounted on the side of the enclosure most visible from the major roadway.
- c. Electric Utility Meter Housing and Riser. The electric meter housing and meter socket shall be supplied and installed by the contractor. The contractor is to coordinate the work to be performed and the materials required with the utility company to make the final connection at the power source. Electric utility required risers, weather/service head and any other materials necessary for connection shall also be included in the pay item. Materials shall be in accordance with the electric utility's requirements. For ground-mounted service, the electric utility meter housing shall be mounted to the enclosure. The meter shall be supplied by the utility company. Metered service shall not be used unless specified in the plans.
- d. Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 volt load circuit by the means MOV and thermal fusing technology. The response time shall be <math><5n</math> seconds and operate within a range of - e. Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 amperes, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V.
- f. Fuses, Fuseholders and Power Indicating Light. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 V AC and shall have a UL listed interrupting rating of not less than 10,000 rms



symmetrical amperes at rated voltage. The power indicating light shall be LED type with a green colored lens and shall be energized when electric utility power is present.

- g. Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.
- h. Utility Services Connection. The Contractor shall notify the Utility Company marketing representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Utility Company marketing representative has received service charge payments from the Contractor. Prior to contacting the Utility Company marketing representative for service connection, the service installation controller cabinet and cable must be installed for inspection by the Utility Company.
- i. Ground Rod. Ground rods shall be copper-clad steel, a minimum of 10 feet (3.0m) in length, and 3/4 inch (20mm) in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the contract.

**Installation.**

- a. General. The Contractor shall confirm the orientation of the traffic service installation and its door side with the engineer, prior to installation. All conduit entrances into the service installation shall be sealed with a pliable waterproof material.
- b. Pole Mounted. Brackets designed for pole mounting shall be used. All mounting hardware shall be stainless steel. Mounting height shall be as noted on the plans or as directed by the Engineer.
- c. Ground Mounted. The service installation shall be mounted plumb and level on the foundation and fastened to the anchor bolts with hot-dipped galvanized or stainless steel nuts and washers. The space between the bottom of the enclosure and the top of the foundation shall be caulked at the base with silicone.

**Basis of Payment.**

The service installation shall be paid for at the contract unit price each for SERVICE INSTALLATION of the type specified which shall be payment in full for furnishing and installing the service installation complete. The CONCRETE FOUNDATION, TYPE A, which includes the ground rod, shall be paid for separately. SERVICE INSTALLATION, POLE MOUNTED shall include the 3/4 inch (20mm) grounding conduit, ground rod, and pole mount assembly. Any charges by the utility companies shall be approved by the engineer and paid for as an addition to the contract according to Article 109.05 of the Standard Specifications.

## **GROUNDING OF TRAFFIC SIGNAL SYSTEMS**

Effective: May 22, 2002

Revised: July 1, 2015

806.01TS

Revise Section 806 of the Standard Specifications to read:

### **General.**

All traffic signal systems, equipment and appurtenances shall be properly grounded in strict conformance with the NEC. This work shall be in accordance with IDOT's District One Traffic Signal Design Details.

The grounding electrode system shall include a ground rod installed with each traffic signal controller concrete foundation and all mast arm and post concrete foundations. An additional ground rod will be required at locations where measured resistance exceeds 25 ohms. Ground rods are included in the applicable concrete foundation or service installation pay item and will not be paid for separately.

Testing shall be according to Article 801.13 (a) (4) and (5).

(a) The grounded conductor (neutral conductor) shall be white color coded. This conductor shall be bonded to the equipment grounding conductor only at the Electric Service Installation. All power cables shall include one neutral conductor of the same size.

(b) The equipment grounding conductor shall be green color coded. The following is in addition to Article 801.04 of the Standard Specifications.

1. Equipment grounding conductors shall be bonded to the grounded conductor (neutral conductor) only at the Electric Service Installation. The equipment grounding conductor is paid for separately and shall be continuous. The Earth shall not be used as the equipment grounding conductor.
2. Equipment grounding conductors shall be bonded, using a UL Listed grounding connector, to all traffic signal mast arm poles, traffic signal posts, pedestrian posts, pull boxes, handhole frames and covers, conduits, and other metallic enclosures throughout the traffic signal wiring system, except where noted herein. Bonding shall be made with a splice and pigtail connection, using a sized compression type copper sleeve, sealant tape, and heat-shrinkable cap. A UL listed electrical joint compound shall be applied to all conductors' terminations, connector threads and contact points. Conduit grounding bushings shall be installed at all conduit terminations including spare or empty conduits.
3. All metallic and non-metallic raceways shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 volts and/or fiber optic cable will not be required to include an equipment grounding conductor.
4. Individual conductor splices in handholes shall be soldered and sealed with heat shrink. When

necessary to maintain effective equipment grounding, a full cable heat shrink shall be provided over individual conductor heat shrinks.

- (c) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, UL listed pressure connectors, and UL listed clamps.

**PEDESTRIAN SIGNAL POST**

Effective: January 1, 2020

Revised:

875.02TS

**Description.** This work shall consist of furnishing and installing a metal pedestrian signal post. All installations shall meet the requirements of the “District One Standard Traffic Signal Design Details”.

**Materials.**

- a. General. The pedestrian signal post shall be designed to support the traffic signal loading shown on the plans. The design and fabrication shall be according to the Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, as published by AASHTO.
- b. Post. The post shall be made of steel or aluminum and have an outside diameter of 4 1/2 in. The post shall be threaded for assembly to the base. Aluminum posts shall be according to the specifications for Schedule 80 aluminum pipe. Steel posts shall be according to the specifications for Schedule 40 steel pipe.
- c. Base. The base of a steel post shall be cast iron. The base of an aluminum post shall be aluminum. The base shall be threaded for the attachment to the threaded post. The base shall be approximately 10 in. high and 6 3/4 in. square at the bottom. The bottom of the base shall be designed to accept four 5/8 in. diameter anchor rods evenly spaced in a 6 in. diameter circle. The base shall be true to pattern, with sharp clean cutting ornamentation, and equipped with access doors for cable handling. The door shall be fastened to the base with stainless steel screws. A grounding lug shall be provided inside the base.
- d. Anchor Rods. The anchor rods shall be 5/8 in. in diameter and 16 in. long and shall be according to Article 1006.09. The anchor rods shall be threaded approximately 6 in. at one end and have a bend at the other end. The first 12 in. at the threaded end shall be galvanized. One each galvanized nut and trapezoidal washer shall be furnished with each anchor rod. The washer shall be properly sized to fully engage and sit flush on all sides of the slot of the base plate.

The aluminum post and base shall be drilled at the third points around the diameter and 1/4 in. by 2 in. stainless steel bolts shall be inserted to prevent the post from turning and wobbling.

- e. Finish. The steel post, steel post cap and the cast iron base shall be hot-dipped galvanized according to AASHTO M 111. If the Department approves painting, powder coating by the manufacturer will be required over the galvanization in accordance with 851.01TS TRAFFIC SIGNAL PAINTING Special Provisions. If the post and the base are threaded after the galvanization, the bare exposed metal shall be immediately

cleaned to remove all cutting solvents and oils, and then spray painted with two coats of an approved galvanized paint.

The aluminum post shall have a natural finish, 100 grit or finer.

**Installation.** The pedestrian signal post shall be erected plumb, securely bolted to a concrete foundation, and grounded to a ground rod according to the details shown on the plans. No more than 3/4 in. of the post threads shall protrude above the base.

A post cap shall be furnished and installed on the top of the post. The post cap shall match the material of the post. The Contractor shall apply an anti-seize paste compound on all nuts and bolts prior to assembly.

Prior to the assembly, the Contractor shall apply two additional coats of galvanized paint on the threads of the post and the base. The Contractor shall use a fabric post tightener to screw the post to the base.

**Basis of Payment.** This work will be paid for at the contract unit price per each for PEDESTRIAN SIGNAL POST, of the length specified.

## **VIDEO VEHICLE DETECTION SYSTEM**

Effective: January 1, 2020

886.04TS

**Description.** This work shall consist of furnishing and installing a video vehicle detection system as specified and/or as shown on the plans. This pay item shall include all necessary work and equipment required to have a fully operational system including but not limited to the detector unit/s, the interface unit and all the necessary hardware, cables and accessories required to complete the installation in accordance with the manufacturer's specifications.

The video vehicle detection system shall work under all weather conditions, including rain, freezing rain, snow, wind, dust, fog, and changes in temperature and light. It shall work in an ambient temperature range of -34 to 74 degrees Celsius.

The video vehicle detection system shall be compatible with the District's approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation. The video vehicle detection system shall provide a minimum of one interface unit that has Ethernet connectivity, surge protection and shall be capable of supporting a minimum of 2 detector units. The video vehicle detection system shall include a display inside the cabinet that has a minimum 10" screen with a minimum 1280x800 resolution.

The video vehicle detection system shall be one of the following systems or an approved equivalent:

- Autoscope Vision
- Iteris Vantage Next

A representative from the supplier of the video vehicle detection system shall supervise the installation and testing of the video vehicle detection system and shall be present at the traffic signal turn-on inspection. Once the video vehicle detection system is configured, it shall not need reconfiguration to maintain performance, unless the roadway configuration or the application requirements change.

The mounting location/s of the detector unit/s shall be per the manufacturer's recommendations. If an extension mounting assembly is needed, it shall be included in this item. All holes drilled into signal poles, mast arms, or posts shall require rubber grommets to prevent chafing of wires.

The video detection system shall be warrantied, free from material and workmanship defects for a period of two years from final inspection.

**Basis of Payment.** This work shall be paid for at the contract unit price each for VIDEO VEHICLE DETECTION SYSTEM, SINGLE APPROACH, the price of which shall include the cost for all of the work and material described herein and includes furnishing, installing, delivery, handling, testing, set-up and all appurtenances and mounting hardware necessary for a fully operational video vehicle detection system.

**SEEDING, CLASS 4A (MODIFIED)**

**Description.** This work shall consist of preparing the seed bed and placing a modified seeding mixture of Class 4A and Class 1A seed mixtures at locations shown on the plans in accordance with Section 250 of the standard specifications.

The Class 4A and Class 1A seeding mixtures shall be combined at a 1:1 ratio prior to placement. The seeding shall be placed on prepared ground consisting of 6-inches of topsoil. After placement of seeding, the seeding area shall be covered with erosion control blanket in accordance with Section 251 of the Standard Specifications. The topsoil and erosion control blanket shall be paid for separately.

Seeding placement, fertilization and watering shall be in accordance with Section 250 of the Standard Specifications.

**Measurement and Payment.** This work will be paid for at the contract unit price per ACRE for SEEDING, CLASS 4A (MODIFIED) which price shall be payment in full for labor, equipment, and material for the work as specified herein.

## **TEMPORARY ACCESS**

Revise Article 402.10 of the STANDARD SPECIFICATIONS to read:

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

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

- (a) Private Entrance. The minimum width shall be 12 ft (3.6 m). The minimum compacted thickness shall be 6 in. (150 mm). The maximum grade shall be eight percent, except as required to match the existing grade.
- (b) Commercial Entrance. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 12 in. (230 mm). The maximum grade shall be six percent, except as required to match the existing grade.
- (c) Road. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 12 in. (230 mm). The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

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

When use of the temporary access is discontinued, the aggregate shall be removed and utilized in the permanent construction or disposed in accordance with Article 202.03.”

**Method of Measurement.** Add the following to Article 402.12 of the STANDARD SPECIFICATIONS:

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

**Basis of Payment.** Revise the second paragraph of Article 402.13 of the STANDARD SPECIFICATIONS to read:

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



**TEMPORARY PAVEMENT REMOVAL**

**Description.** This work shall include the removal of temporary pavement and necessary aggregate at locations where proposed temporary pavement has been installed for maintenance of traffic (for all stages and phases) and as directed by the ENGINEER.

Temporary pavement to be removed shall consist of either HMA and/or PCC pavement removal in accordance with Section 440 of the Standard Specifications. Temporary pavement shall only be removed after all construction stages requiring its use are complete.

**Measurement and Payment.** This work will be paid for at the contract unit price per SQUARE YARD for TEMPORARY PAVEMENT REMOVAL, which price shall be payment in full for labor, equipment, and material for the work as specified herein.

**HOT MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH**

This work shall be done in accordance with Section 440 of the STANDARD SPECIFICATIONS except as modified herein.

**440.01 Description.** Revise this Article to read:

"440.01 Description. This work shall consist of the removal and satisfactory disposal of the entire HMA pavement surface to the variable depths indicated in the plans. The Hot-Mix Asphalt will vary from approximately ½" to 3". The pavement core report included with the bidding documents indicates the existing varying HMA pavement thicknesses. The pavement core information is for informational purposes only, and actual existing pavement thickness will vary."

**440.03 General.** Add the following paragraph to the end of this Article:

"No additional compensation will be allowed because of variations from the assumed HMA surface thickness or from the HMA surface thickness shown on the Plans."

"No additional compensation will be allowed due to the presence of geotextile fabric in the milled asphalt layer(s)."

**Basis of Payment.** This work shall be paid for at the contract unit price per square yard for HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH.

**WATER MAIN REMOVAL**

**Description.** This work shall consist of the WATER MAIN REMOVAL, of the diameter specified of existing water main that are in direct conflict with the proposed improvements. Existing water main that are to be taken out of operation but are not in conflict with the proposed improvements shall be abandoned as specified for ABANDON EXISTING WATER MAIN.

This work shall be completed in accordance with applicable portions of Section 551 of the Standard Specifications, except that the material shall not be salvaged, but shall be disposed according to Article 202.03 of the Standard Specifications. This work shall also include any necessary sawcutting of the existing water main and the removal of valves, tees, and other appurtenances (excluding fire hydrants).

The ends of the existing water main shall be plugged as specified for ABANDON EXISTING WATER MAIN.

Trenches resulting from the removal of water main shall be backfilled in accordance with the applicable requirements of Article 550.07. Backfill of removal trenches (including Trench Backfill) shall be included in this item.

**Basis of Payment.** This work shall be paid for at the contract unit price for linear foot for WATER MAIN REMOVAL, of the diameter specified which price shall include all labor, materials, and equipment necessary to complete the work as specified herein.

### **CONNECTION TO EXISTING WATER MAIN**

**Description.** This work shall consist of the furnishing of all labor, tools, and equipment necessary to affect a connection of a new water main to the existing water main. This work shall include taking the existing water main out of service and cutting, capping and abandoning the existing water main as shown on the plans. Temporary water system shutdowns shall be as specified elsewhere for TEMPORARY WATER SHUTDOWNS. This work shall be performed as shown on the plans and in accordance with applicable City Standard Details.

**Installation.** All materials shall be on hand before work is undertaken to minimize the time necessary to complete the work required. Only Water Department Personnel will be in charge of closing system valves, but the Contractor shall lend any assistance necessary to expedite the shutdown. In addition, the Contractor shall distribute notices of water service interruptions door to door as directed by the Engineer.

Once water service has been shut down by the City, the Contractor shall cut the existing water main, remove pipe as necessary to accommodate connection to the new main. Contractor shall then complete the water main connection and abandon and plug/cap and block the existing water main as shown on the plans. All mechanical joints for water main pipe shall be MegaLug. Abandonment of water main shall be as specified elsewhere for ABANDON EXISTING WATER MAIN.

The Contractor shall be required to furnish any and all pipefittings, required jointing materials, and all work necessary to complete the connection as specified. This includes but not limited to any necessary plugs, blocks, corporation stops, sleeves, mechanical joints, reducers and water main pipe. All fittings and pipe that are installed under this item shall be placed on a bedding in accordance with the plans. Pipe fittings shall not be paid for separately but shall be included in the cost of the work as specified. In addition, whenever a connection is made and a portion of the existing system will not be subject to the chlorination procedure for the new main, the Contractor shall provide tablet disinfection procedures as described in Section 41-2.14C (3) of the Water and Sewer Standard Specifications. All other items required for restoration (i.e. pavement patches, sodding, etc.) will be paid for under the specific pay item in the contract. After the connection has been made, a visual inspection shall be made for leaks under system pressure, irrespective of the pressure test that may be required under other provisions in the contract. If no visual leaks are detected, the excavation shall be backfilled with materials as directed by the City.

**Basis of Payment.** This work will be paid for at the contract unit price per each for CONNECTION TO EXISTING WATER MAIN, of the size specified, which price shall include all labor, material, and equipment necessary to complete the work as specified, including granular bedding, granular backfill and all pipe/pipefittings, including cut-in sleeves and reducers, necessary to complete the work.

**TEMPORARY WATER SHUTDOWNS**

**Description.** The City water division shall be notified at least forty-eight (48) hours (not including holidays and weekends) in advance of any water shutdown. The City will determine what residences will be affected by the shutdown and supply to the Contractor shut-off notice handouts and those areas to be notified. The Contractor shall be responsible for distributing handouts to affected residences. The turning of any valve other than those installed but not yet accepted by the City shall be performed by water division personnel. Before the system is returned to service, a fire hydrant must be opened to relieve any air in the line and to flush the system. After the system is fully flushed, Contractor will collect chlorine residual and bacteriological samples. Another sample will be collected after 24 hours.

**Basis of Payment.** This work will not be paid for separately but shall be included in the bid price for CONNECTION TO EXISTING WATER MAIN, of the size specified.

**MANHOLES, TYPE A, RESTRICTOR PLATE**

**Description.** This work shall consist of constructing a Type A manhole of the diameter specified with restrictor in accordance with Sections 602 and 1006 of the Standard Specifications, the plan details, as specified herein and/or as directed by the Engineer.

**General Requirements.** Construction shall conform to the details shown in the plans, all applicable Standard Drawings, and all applicable portions of Sections 602 and 1006 of the Standard Specifications. The structure shall have a 2-foot deep sump between the bottom of the lowest storm sewer invert and the bottom of the structure. Price shall include but not be limited to all frames, grates, lids, sand cushion, steps, 6" concrete wall, flat slab tops, all excavation and backfilling, and all other labor, materials, and equipment needed to perform the work as specified herein.

**Method of Measurement.** This work will be measured for payment in units of EACH.

**Basis of Payment.** This work will be paid for at the contract unit price per EACH for MANHOLES, TYPE A, WITH 2 TYPE 1 FRAME, CLOSED LID, RESTRICTOR PLATE or MANHOLES, TYPE A, TYPE 20 FRAME AND GRATE, RESTRICTOR PLATE, of the diameter specified.

**CATCH BASINS, TYPE A, 5'-DIAMETER, TYPE 22 FRAME AND GRATE (SPECIAL)**

**Description.** This work shall consist of constructing manholes, together with cast iron frames and grates.

**General Requirements.** This work shall be completed in accordance with Section 602 of the Standard Specifications and Standards 602001-02 and 604081-04. The structure shall have a 2-foot deep sump between the bottom of the lowest storm sewer invert and the bottom of the structure.

**Method of Measurement.** This work will be measured for payment in units of each.

**Basis of Payment.** This work will be paid for at the contract unit price per each for CATCH BASINS, TYPE A, 5'-DIAMETER, TYPE 22 FRAME AND GRATE (SPECIAL).

**SANITARY MANHOLE**

**Description.** This work shall consist of constructing sanitary sewer manholes of the size indicated on the plans, together with the necessary cast iron frames and lids, in accordance with the plans and applicable City Standard details.

Manholes constructed over proposed or existing sanitary sewers and which are indicated on the plans as sanitary manholes shall be provided with rubber gasketed couplings to ensure a watertight seal between pipe and manhole. The rubber gasketed couplings shall conform to ASTM Specification C-923. Sanitary manholes shall be provided with cast iron steps on 16" centers from frame to invert. The rubber gasketed couplings and steps shall be included in the cost of sanitary manholes and will not be paid for separately.

Type 1 frame, closed lid shall be used on all sanitary manholes. Lids for sanitary manholes shall have "CITY OF LOCKPORT" and the word "SANITARY" cast into them.

The Contractor is responsible for tying in all existing combined sewers to the proposed structure as required. Up to 10 feet of new sewer (if required) for each existing sewer tying into the proposed structure shall be considered included to this pay item. The Contractor shall be responsible for verifying the size, inverts and locations of the existing sewers to be connected to the proposed structure. Any existing sewers that are damaged during construction shall be replaced in kind by the Contractor at no cost to the City. In addition, the Contractor will be responsible for determining which structures require precast concrete flat slab tops in accordance with Standard Drawing 502601. Flat slab tops will only be allowed where a conical section cannot be installed due to a lack of clearance.

Sanitary manholes shall be tested for watertightness in accordance with Section 32-12 of the Standard Specifications for Sewer and Water Construction in Illinois.

**Method of Measurement and Basis of Payment.** This work shall be paid for at the contract unit price per each for SANITARY MANHOLE, of the type and diameter specified, which price will include all excavation, backfilling, sand cushion, flat slab tops (when required), frame and lid, bypass pumping, existing sewer connections and connection plugs required to complete the work.

**SANITARY MANHOLES TO BE ADJUSTED**

This work shall be done in accordance with Section 602 of the STANDARD SPECIFICATIONS and shall consist of the adjustment of sanitary manholes and furnishing and installing a new type 1 frame, closed lid. Non-hardening butyl rubber mastic sealant; minimum thickness 1/4 inch, shall be used between adjusting rings in place of mortar, or as required by the Owner of the Sanitary Sewer. In locations where existing external frame seals exist, it shall be removed and disposed of and an internal/external frame seal shall be installed. In locations where internal frame seals exist, it shall be removed and disposed of and an internal/external frame seal shall be installed. In locations where there are no existing frame seals, an internal/external frame seal shall be installed. The installation of the internal/external frame seal will not be paid for separately and will be considered incidental to this pay item.

The Internal/External Frame seal shall consist of the following:

- (A) Provide frame seals consisting of a flexible internal rubber sleeve, rubber ring, and external rubber sleeve and extension, and stainless-steel compression bands.
- (B) Rubber sleeve, ring, butyl tape, and extension:
  - (1) Provide rubber sleeve and extension complying with ASTM D412 and ASTM D2240.
  - (2) Provide rubber ring complying with ASTM D-2000.
  - (3) Provide butyl tape: Comply with 1000% minimum webbing @ 77 degrees F, 500% minimum elongation @ 32 degrees F, and maximum 75 psi compressibility @ 77 degrees F.
  - (4) Provide sleeve with a minimum thickness of 0.062" and unexpanded external vertical heights of 10 to 12 inches.
  - (5) Provide extension having a minimum thickness of 0.062".
  - (6) Comply with a minimum 1500 psi tensile strength, maximum 18 percent compression set and a hardness (durameter) of 48±5.
- (C) Compression band:
  - (1) Provide compression band to compress the sleeve against the manhole.
  - (2) Use 16 gauge stainless steel conforming to ASTM A240 Type 304 with no welded attachments and having a minimum width of 1/2-inch.
  - (3) Make a watertight seal having a minimum adjustment range of 2 diameter inches.
  - (4) Provide stainless steel screws, bolts, and nuts conforming to ASTM F593 and 594, Type 304.
- (D) Or as required by the Owner of the sanitary sewer system.

The Internal/External Frame Seal shall be installed as follows:

- (A) Install internal/external rubber gasket on the manhole chimney.
  - (1) Provide watertight gasket to eliminate leakage between the internal/external frame seal and the adjusting ring and between each adjusting ring down to and including cone section.
- (B) Clean surface and prepare the lower 2 inches of the manhole frame and

- exterior of all adjusting rings and cone section/corbel surfaces.
- (C) Install internal rubber gasket in accordance with manufacturer's recommendations.
    - (1) Field verify for suitable dimensions and layout before installation.
    - (2) Realign frame as required.
  - (D) Repair and apply mortar grout to the adjusting rings as required to provide a smooth, circular surface for the external rubber gasket.
  - (E) Install external rubber gasket in accordance with manufacturer's recommendations.
    - (1) Field verify for suitable dimensions and layout before installation.
    - (2) Utilize sealing caulk where required.
    - (3) Provide chimney seal extensions as required.
  - (F) Test installation by flooding area around the manhole with water before backfilling and surface restoration.
    - (1) Gaskets are required to provide watertight seal at openings between the frame and adjusting rings and between adjacent adjusting rings down to the cone/corbel section.
  - (G) Reinstall and retest failing gaskets at no additional cost to Owner
  - (H) Or as required by the Owner of the sanitary sewer system.

**Basis of Payment.** This work will be paid for at the contract unit price per each of SANITARY MANHOLES TO BE ADJUSTED, which price shall include all the above.

### **SANITARY MANHOLES TO BE REMOVED**

This work shall include the removal and disposal of sanitary manholes and castings and shall be done in accordance with Section 605 of the Standard Specifications except as modified herein.

**605.03 Removing Existing Manholes, Catch Basins, and Inlets.** Revise Article to read:

“Existing sanitary manholes designated to be removed shall be removed to a depth of at least four (4”) below the bottom of the sanitary sewer system. All debris in the structure below the sanitary sewer shall be removed and backfilled with compacted crushed aggregate conforming to IDOT gradation CA-7.”

**Basis of Payment.** This work shall be paid for at the contract unit price per each for SANITARY MANHOLES TO BE REMOVED which price shall include all equipment, material, and labor to perform the work as indicated on the plans and specified herein.



**FRAMES AND LIDS TO BE ADJUSTED (SPECIAL)**

**Description.** This work shall be performed in accordance with Sections 602 and 603 of the Standard Specifications and sheet BD-08 of the District One Details with the following alterations:

These items of work shall be performed as directed by the ENGINEER in conformance with applicable provisions of Sections 353, 406, 602 and 603 of the "Standard Specifications for Road and Bridge Construction". This work shall be completed in accordance with the Details for Frames and Lids Adjustment with Milling (BD-8) in the Plans, and shall include the following:

Stage I (Before Pavement Milling)

- A. Remove a minimum of 12" of the pavement from around the structure.
- B. Remove the existing frame and lid from the structure.
- C. Cover the structure opening with a 36" diameter metal plate.
- D. Backfill with crushed stone and a minimum 1½" thick bituminous material approved by the ENGINEER.

Stage II (After Pavement Milling/Leveling Binder)

- A. Remove the bituminous material and crushed stone.
- B. Install the frame and lid; adjust the frame to its final surface elevation.
- C. The surrounding space shall be filled with Class PP-2 concrete to the elevation of the surface of the existing base course.

Drainage and utility structures shall be understood to include catch basins, manholes, inlets, and valve vaults which lie within the bituminous roadway.

Each structure adjustment shall be limited to two adjustment rings. The final ring and rings under 2" on all drainage adjustments shall be rubber. The CONTRACTOR shall place a continuous strip 3/8" thick of polyurethane sealer/adhesive between the PCC structure or PCC ring and the bottom of the rubber ring. The CONTRACTOR shall also place a continuous strip 3/8" thick of polyurethane sealer/adhesive between the top of the rubber ring and the bottom of the frame.

Hydraulic cement shall be used in the adjustment of said structure to seal the outside of the adjustment rings and under the frame.

A Type 1 frame, closed lid shall be replaced on structures as directed by the engineer in the field. If required, this item will be paid for separately.

**Basis of Payment.** This work shall be paid for at the contract unit price per EACH for FRAMES AND LIDS TO BE ADJUSTED (SPECIAL), which price shall include all labor, material and equipment required to complete the work as specified.

**TRAFFIC CONTROL PLAN**

**Description.** This work shall be done in accordance with the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", and any details and Highway Standards contained in the Plans and Special Provisions, and the Special Provisions contained herein, except as modified herein.

Special Attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards and District 1 Details:

HIGHWAY STANDARDS: 701001, 701011, 701006, 701301, 701311, 701501, 701502, 701701, 701801, 701901

DISTRICT 1 DETAILS:

- TC-10 TRAFFIC CONTROL & PROTECTION FOR SIDE ROADS, INTERSECTIONS AND DRIVEWAYS
- TC-11 TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)
- TC-13 DISTRICT ONE TYPICAL PAVEMENT MARKINGS
- TC-14 TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC)
- TC-16 SHORT TERM PAVEMENT MARKING LETTERS AND SYMBOLS
- TC-22 ARTERIAL ROAD INFORMATION SIGN
- TC-26 DRIVEWAY ENTRANCE SIGNING

SPECIAL PROVISIONS: MAINTENANCE OF ROADWAYS, PUBLIC CONVENIENCE AND SAFETY (D1), TEMPORARY INFORMATION SIGNING, WORK ZONE TRAFFIC CONTROL DEVICES (BDE), VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE), TRAFFIC CONTROL AND PROTECTION (ARTERIALS)

The Contractor shall contact the City at least 72 hours in advance of beginning work. Construction operations shall be conducted in a manner such that streets will be open to live traffic throughout the duration of the project in accordance with the Maintenance of Traffic Plan. Advanced notice shall be provided directly to the City and to motor vehicle operators via Changeable Message Boards prior to any stage changes in the Maintenance of Traffic Plan. Changeable Message Boards shall not be included in the cost of TRAFFIC CONTROL & PROTECTION, (SPECIAL) but shall be paid for separately.

The Contractor shall make frequent inspections of the worksite. Any traffic control items that are worn, damaged or are inoperative to the extent that they no longer meet these specifications or that have been displaced shall be repaired or removed and replaced. Traffic control items shall be properly installed and operational 24 hours-a-day, 7 days a week. The individual specified in paragraph 6 of subsection (a) shall be available for 24 hour-a-day contact. The Contractor shall respond to requests from the City or State to correct traffic control deficiencies within 4 hours of the request. If specification(s) is(are) not met within 4 hours of notice, the City will take whatever action it may deem necessary to bring the traffic control within specification and deduct all costs (actual and incurred)

from amounts due the Contractor.

All temporary pavement markings and pavement marking removals (permanent or temporary) necessary to complete the work as specified shall not be included in TRAFFIC CONTROL AND PROTECTION (SPECIAL), but shall be paid for separately.

**Method of Measurement.** Traffic control and protection will be measured for payment on a lump sum basis.

**Basis of Payment.** Traffic control and protection will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL), which price shall include all of the above listed details, standards, and special provisions.

**TRAFFIC CONTROL AND PROTECTION (ARTERIALS)**

Effective: February 1, 1996

Revised: March 1, 2011

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

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

**Method of Measurement:** All traffic control (except Traffic Control and Protection (Expressways)) and temporary pavement markings) indicated on the traffic control plan details and specified in the Special Provisions will be measured for payment on a lump sum basis.

**Basis of Payment:** All traffic control and protection will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

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

**REMOVE SIGN COMPLETE**

**Description.** This work shall consist of the complete removal of sign panels or sign panel assembly and metal post regardless of type in accordance with applicable provisions of Section 724 of the Standard Specifications as indicated on the plans. This shall also include the removal and disposal of any sign post foundations that are in conflict with proposed items of work as directed by the Engineer.

**Basis of Payment.** This work shall be paid for at the contract unit price per each for REMOVE SIGN COMPLETE which price shall include the equipment, materials, and labor to completely remove the sign panels or sign assembly and metal post regardless of type.

**RELOCATE SIGN PANEL AND POST**

**Description.** This work shall consist of the removal and relocation of sign panels or sign panel assembly and metal post regardless of type in accordance with applicable provisions of Section 724 of the Standard Specifications as indicated on the plans. Signs that are in conflict with proposed improvements and/or construction operations shall be removed and relocated as shown on the plans and directed by the Engineer. If needed, sign panels and posts shall be temporarily relocated or temporarily stored during construction and reinstalled at its permanent location when construction operations permit. The cost for temporary relocation or storage of sign panels and posts shall be included in the cost of this item and no separate payment shall be allowed, regardless of the number of relocations required.

This shall also include the removal and disposal of any sign post foundations that are in conflict with proposed items of work as directed by the Engineer.

**Basis of Payment.** This work shall be paid for at the contract unit price per each for RELOCATE SIGN PANEL AND POST which price shall include the equipment, materials, and labor to completely remove and relocate the sign panels or sign assembly and metal post, regardless of type.

**UNINTERRUPTABLE POWER SUPPLY, SPECIAL**

Effective: January 1, 2013

Revised: May 19, 2016

862.01TS

This work shall be in accordance with section 862 of the Standard Specification except as modified herein

Add the following to Article 862.01 of the Standard Specifications:

The UPS shall have the power capacity to provide normal operation of a signalized intersection that utilizes all LED type signal head optics, for a minimum of 6 (six) hours.

Add the following to Article 862.02 of the Standard Specifications:

Materials shall be according to Article 1074.04 as modified in UNINTERRUPTABLE POWER SUPPLY, SPECIAL.

Add the following to Article 862.03 of the Standard Specifications:

The UPS shall additionally include, but not be limited to, a battery cabinet, where applicable. For Super-P (Type IV) and Super-R (Type V) cabinets, the battery cabinet is integrated to the traffic signal cabinet, and shall be included in the cost for the traffic signal cabinet of the size and type indicated on the plans.

The UPS shall provide reliable emergency power to the traffic signals in the event of a power failure or interruption.

Revise Article 862.04 of the Standard Specifications to read:

**Installation.** When a UPS is installed at an existing traffic signal cabinet, the UPS cabinet shall partially rest on the lip of the existing controller cabinet foundation and be secured to the existing controller cabinet by means of at least four (4) stainless steel bolts. The UPS cabinet shall be completely enclosed with the bottom and back constructed of the same material as the cabinet.

When a UPS is installed at a new signal cabinet and foundation, it shall be mounted as shown on the plans.

At locations where UPS is installed and an Emergency Vehicle Priority System is in use, any existing incandescent confirmation beacons shall be replaced with LED lamps in accordance with the District One Emergency Vehicle Priority System specification at no additional cost to the contract. A concrete apron shall be provided and be in accordance with Articles 424 and 202 of the Standard Specifications. The concrete apron shall also, follow the District 1 Standard Traffic Signal Design Detail, Type D for Ground Mounted Controller Cabinet and UPS Battery Cabinet.

This item shall include any required modifications to an existing traffic signal controller as a result of the addition of the UPS including the addition of alarms.

**Materials.** Revise Article 1074.04(a)(1) of the Standard Specifications to read:

The UPS shall be line interactive or double conversion and provide voltage regulation and power conditioning when utilizing utility power. The UPS shall be sized appropriately for the intersection(s) normal traffic signal operating load. The UPS must be able to maintain the intersection's normal operating load plus 20 percent (20%) of the intersection's normal operating load. When installed at a railroad-interconnected intersection the UPS must maintain the railroad pre-emption load, plus 20 percent (20%) of the railroad preemption-operating load. The total connected traffic signal load shall not exceed the published ratings for the UPS.

The UPS shall provide a minimum of 6 (six) hours of normal operation run-time for signalized intersections with LED type signal head optics at 77 °F (25 °C) (minimum 1000 W active output capacity, with 86 percent minimum inverter efficiency).

Revise the first paragraph of Article 1074.04(a)(3) of the Standard Specifications to read:

The UPS shall have a minimum of four (4) sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) relay contact closures, available on a panel mounted terminal block or locking circular connectors, rated at a minimum 120 V/1 A, and labeled so as to identify each contact according to the plans.

Revise Article 1074.04(a)(10) of the Standard Specifications to read:

The UPS shall be compatible with the District's approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation.

Revise Article 1074.04(a)(17) of the Standard Specifications to read:

When the intersection is in battery backup mode, the UPS shall bypass all internal cabinet lights, ventilation fans, cabinet heaters, service receptacles, luminaires, any lighted street name signs, any automated enforcement equipment and any other devices directed by the Engineer.

Revise Article 1074.04(b)(2)b of the Standard Specifications to read:

Batteries, inverter/charger and power transfer relay shall be housed in a separate NEMA Type 3R cabinet. The cabinet shall be Aluminum alloy, 5052-H32, 0.125-inch thick and have a natural mill finish.

Revise Article 1074.04(b)(2)c of the Standard Specifications to read:

No more than three batteries shall be mounted on individual shelves for a cabinet housing six batteries and no more than four batteries per shelf for a cabinet housing eight batteries.

Revise Article 1074.04(b)(2)e of the Standard Specifications to read:

The battery cabinet housing shall have the following nominal outside dimensions: a width of 25 in. (785 mm), a depth of 16 in. (440 mm), and a height of 41 to 48 in. (1.1 to 1.3 m). Clearance between shelves shall be a minimum of 10 in. (250 mm).

End of paragraph 1074.04(b)(2)e

The door shall be equipped with a two position doorstop, one a 90° and one at 120°.

Revise Article 1074.04(b)(2)g of the Standard Specifications to read:

The door shall open to the entire cabinet, have a neoprene gasket, an Aluminum continuous piano hinge with stainless steel pin, and a three point locking system. The cabinet shall be provided with a main door lock which shall operate with a traffic industry conventional No. 2 key. Provisions for padlocking the door shall be provided.

Add the following to Article 1074.04(b)(2) of the Standard Specifications:

j. The battery cabinet shall have provisions for an external generator connection.

Add the following to Article 1074.04(c) of the Standard Specifications:

- (8) The UPS shall include a tip or kill switch installed in the battery cabinet, which shall completely disconnect power from the UPS when the switch is manually activated.
- (9) The UPS shall include standard RS-232 and internal Ethernet interface.
- (10) The UPS shall incorporate a flanged electric generator inlet for charging the batteries and operating the UPS. The generator connector shall be male type, twist-lock, rated as 15A, 125VAC with a NEMA L5-15P configuration and weatherproof lift cover plate. Access to the generator inlet shall be from a secured weatherproof lift cover plate or behind a locked battery cabinet police panel.
- (11) The bypass switch shall include an internal power transfer relay that allows removal of the battery back-up unit, while the traffic signal is connected to utility power, without impacting normal traffic signal operation.

Revise Article 1074.04(d)(3) of the Standard Specifications to read:

All batteries supplied in the UPS shall be either gel cell or AGM type, deep cycle, completely sealed, prismatic lead calcium based, silver alloy, valve regulated lead acid (VRLA) requiring no maintenance. All batteries in a UPS installation shall be the same type; mixing of gel cell and AGM types within a UPS installation is not permitted.

Revise Article 1074.04(d)(4) of the Standard Specifications to read:

Batteries shall be certified by the manufacturer to operate over a temperature range of -13 to 160 °F (-25 to + 71 °C) for gel cell batteries and -40 to 140 °F (-40 to + 60 °C) for AGM type batteries.

Add the following to Article 1074.04(d) of the Standard Specifications:

- (9) The UPS shall consist of an even number of batteries that are capable of maintaining normal operation of the signalized intersection for a minimum of 6 (six) hours. Calculations shall be provided showing the number of batteries of the type supplied that are needed to satisfy this requirement. A minimum of four batteries shall be provided.
- (10) Battery Heater mats shall be provided, when gel cell type batteries are supplied.

Add the following to the Article 1074.04 of the Standard Specifications:

- (e) Warranty. The warranty for an uninterruptable power supply (UPS) and batteries (full replacement) shall cover a minimum of 5 years from date the equipment is placed in operation.

(f) Installation. Bypass switch shall completely disconnect the traffic signal cabinet from the utility provider.

(g) The UPS shall be set-up to run the traffic signal continuously, without going to a red flashing condition, when switched to battery power unless otherwise directed by the Engineer. The Contractor shall confirm set-up with the Engineer. The continuous operation mode when switched to battery may require modification to unit connections and these modifications are included in the unit price for this item.

Revise Article 862.05 of the Standard Specifications to read:

**Basis of Payment.** This work will be paid for at the contract unit price per each for UNINTERRUPTABLE POWER SUPPLY, SPECIAL or UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL. Replacement of Emergency Vehicle Priority System confirmation beacons and any required modifications to the traffic signal controller shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY, SPECIAL or UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL item. The concrete apron and earth excavation required shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL item.

### **LED SIGNAL FACE, LENS COVER**

Effective: July 01, 2021

880.03TS

**Description.** This work shall consist of furnishing and installing a signal lens cover with the purpose or preventing snow buildup on and around a signal lens allowing for clear indication during inclement weather.

This item shall fit over a 12 inch signal head lens and shall include the clear lens cover, attachment collar and any clips or fasteners necessary to fit it flush. The cover shall be installed in accordance with the manufacturer's instructions and in a manner that prevents dust, debris, or moisture buildup on the inside of the lens cover that could affect the signal indication visibility.

The snow resistant signal head lens cover shall be warrantied, free from material and workmanship defects for a period of three years from final inspection.

**Basis of Payment.** This work shall be paid for at the contract unit price each for LED SIGNAL FACE, LENS COVER, the price of which shall include the cost for all of the work and material described herein and includes furnishing, installing, and all mounting hardware necessary for a fully operational snow resistant signal head lens cover.



**CONCRETE FOUNDATION, PEDESTRIAN POST**

Effective: April 1, 2019

Revised: November 1, 2020

878.03TS

This item shall follow Section 878. Traffic Signal Concrete Foundation of the Standard Specifications.

No foundation is to be poured until the Resident Engineer gives his/her approval as to the depth of the foundation.

**Basis of Payment.**

This work will be paid for at the contract unit price per foot of depth of CONCRETE FOUNDATION, TYPE A 12-INCH DIAMETER.

**ORNAMENTAL METAL FENCE**

**Description.** This work shall consist of installing a 48"-high decorative aluminum fence as shown on the plans and in accordance with the manufacturer's recommendations. Fence shall be installed in accordance with the details in the plans and conform to the following:

- 8'-wide panels
- 3/4" pickets
- 2-1/2" x 2-1/2" corner posts

Fence shall be affixed to the cast-in-place concrete curb, sidewalk or concrete foundations, as shown on the plans and as directed by the ENGINEER, in accordance with manufacturer's recommendations. Stainless steel adhesive concrete anchors shall be used in lieu of expansion bolts.

Payment for furnishing and installing connections and connection materials (anchor plates, anchors, anchor adhesive, fence posts, concrete foundations, etc.) shall be included in this work. CONTRACTOR shall be responsible for coordinating the construction of cast-in-place concrete such that it accommodates the requirements of the ornamental fence connection.

Fence shall be powder coated (color: black).

**Basis of Payment.** This work shall be paid for per Foot as ORNAMENTAL METAL FENCE, which price shall be payment in full for all labor, equipment and material required to complete the work as specified.

## **EXPLORATORY EXCAVATION**

**Description.** This item shall consist of locating underground utilities that potentially conflict with proposed improvements.

**Requirements.** It shall be the Contractor's responsibility to locate underground utilities that are marked on the plans. This work will not be paid for separately but shall be included in the cost of the item being constructed. Exceptions are as follows:

- **Utilities Marked on the Plans:** If the item to be constructed is grade critical, and cannot be adjusted either vertically or horizontally (i.e. storm sewer, sanitary sewer), and there is a potential for conflict with the utility. Locating potentially conflicting utilities will be paid under this item.
- **Utilities Not Marked on Plans:** If a utility is not shown on the plans (or not shown in accordance with Article 104.03 of the Standard Specifications). Locating potentially conflicting utilities will be paid under this item. As per Article 107.40(a)(2) of the Standard Specifications, "Service connections shall not be considered to be utilities in unanticipated locations".

**Construction.** The method of excavation to locate utilities will be at the contractor's discretion, as approved by the Engineer. If the contractor elects to use hydro excavation for the removal of excavated material, he/she shall be responsible for all water usage and disposing of the excavated material in accordance with Article 202.03 of the Standard Specifications. Regardless of the method of excavation, the Contractor shall be responsible for replacing excavated soil in the resulting hole with sand, limestone screenings or other material as approved by the Engineer.

Any utilities damaged during excavation operations shall be repaired or replaced at the contractor's expense; no additional compensation shall be allowed.

Removal and replacement/restoration of any pavement, sidewalk, parkway, driveway, etc. necessary to complete the exploration excavation shall not be paid for separately but shall be included in the cost of this item. Sidewalk removal and replacement shall include the complete sidewalk panel.

**Construction Requirements.** The depths of the exploration trench will vary depending on the depths of the existing utilities. All trench backfill shall be included in the cost of this item.

**Measurement and Payment.** This work shall be paid for at the contract unit price per foot of trench excavated for EXPLORATORY EXCAVATION which the price shall include all excavation, equipment and any other necessary items to complete the work as specified herein.

**WATER SERVICE RECONNECTION, WITH NEW BUFFALO BOX, LONG SIDE**  
**WATER SERVICE RECONNECTION, WITH NEW BUFFALO BOX, SHORT SIDE**

**Description.** This work shall consist of the complete removal or abandonment of existing water service to the right-of-way line and replacing and reconnecting a new copper water service to the existing or proposed water main, as shown on the plans and as directed by the Engineer.

This work shall be completed in accordance with Section 562 of the Standard Specifications, Section 41-2.11 of the Water and Sewer Specifications and applicable City Standard details and include the installation of a new service line from the water main to a new water service box near the right-of-way line. In the case where an existing water meter/meter pit exists for a property, the new water service box shall be installed between the meter pit and new main, as close to the meter pit as possible.

The work shall include the removal of all existing service boxes and reconnection of the existing services line to the new service line near the right-of-way line. In the case where an existing water meter/meter pit exists for a property, the new water service shall connect to the existing service at the existing meter pit. The Contractor shall provide the fittings necessary to connect new service boxes to the existing lines, regardless of the material composition of existing service lines which may include lead, copper, galvanized iron, or other materials.

**Construction Requirements.** Copper pipe shall be copper water tube, Type K, soft temper, for underground service conforming to ASTM B-88 and B-251. The pipe shall be marked with manufacturer's name or trademark and a mark indicative of the type of pipe. The outside diameter of the pipe and minimum weight per foot of the pipe shall not be less than that listed in ASTM B-251, Table 11.

New water services shall be Type K copper lines and shall match the existing service size, except that the minimum size installed shall be 1"-diameter unless otherwise directed by the City. The Contractor shall be responsible for verifying the size of the existing service prior to the installation of its replacement.

**All new service lines shall be directional bored beneath the existing pavement, ribbon curb, curb and gutter and sidewalk unless otherwise allowed by the Engineer.**

Corporation stops shall be one of the three manufacturers in the tables below.

CORPORATION STOP CATALOG NUMBERS			
SIZE	FORD	AY MCDONALD	MUELLER
1"	FB1000-4-Q-NL	74701BQ	B-25008N
1.5"	FB1000-6-Q-NL	74701BQ	B-25008N
2"	FB1000-7-Q-NL	74701BQ	B-25008N

No splices shall be installed between the corporation stop and the water service box.

All work shall be in accordance with the details on the plans and applicable City Standard details.

Service connections to the proposed water main shall be made individually and in as short of time as possible after testing and disinfection. No water customer shall be without water in excess of two (2) hours and shall be notified prior to disconnecting service.

All service boxes will be replaced. All new curb stops and service boxes shall be located in the parkway out of driveways and sidewalks and approximately at the right-of-way line. In the case where an existing water meter/meter pit exists for a property, the new curb stop and service box shall be installed between the meter pit and new main, as close to the meter pit as possible. Location of the curb stop and service box shall be approved by the Engineer prior to starting work on the service replacement. The service box shall be installed over the curb stop and held in a truly vertical position until sufficient backfill has been placed to ensure permanent vertical alignment of the box. The top of the box shall be adjusted and set flush with the established ground surface grade. Curb Box and Curb Stops shall be one of the manufacturers in the tables below:

CURB STOP CATALOG NUMBERS			
SIZE	FORD	AY MCDONALD	MUELLER
1"	B44-444-M-NL	76104Q	B-25209N
1.5"	B44-666-M-NL	76104Q	B-25209N
2"	B44-777-M-NL	76104Q	B-25209N

CURB BOX CATALOG NUMBERS		
SIZE	FORD	MUELLER
1"	EM2-60-56	H-10300
1.5"	EM2-60-56	H-10302-99005
2"	EM2-60-67	H-10302-99005

The installation of the new curb stops and service boxes, and the removal and disposal of the existing curb stops and services boxes will not be paid for separately but shall be included in WATER SERVICE REPLACEMENT.

All water service replacements larger than three (3) inches in diameter shall be paid for as DUCTILE IRON WATER MAIN of the size required.

**Method of Measurement and Basis of Payment.** This work shall be measured and paid for at the contract unit price each for WATER SERVICE RECONNECTION, WITH NEW BUFFALO BOX, LONG SIDE, or WATER SERVICE RECONNECTION, WITH NEW BUFFALO BOX, SHORT SIDE of the size range noted, which payment shall be full compensation for all work, including disconnecting the existing water service, abandonment or removal of the existing water service as directed by the Engineer, removal and disposal of existing water service boxes and curb stops, tapping the water main, corporation stop, service box, curb stop, copper water service line, connection to the existing water service, bushings, unions, or other fittings to disconnect existing services from the water main to be abandoned, and to reconnect them to the proposed water main. The work shall also include all required excavation and backfill in accordance with the plans. Trench backfill shall not be paid for separately but shall be included in the cost of this item. The work for all other restoration including driveway, sidewalk, curb and gutter, and sodding as shown on the plans shall be paid for separately.

Pay limits for removal and replacement of water services shall extend from the water main to the new service box. Any work required beyond these pay limits due to damage or breakage caused by the Contractor shall be repaired at the Contractor's sole cost.

**INLETS ABANDONED, SPECIAL**

**Description.** This work shall consist of the abandonment, removal, and filling of the inlet drainage scuppers above the existing Milne Creek box culverts. This work shall be done in accordance with applicable provisions of Sections 593 and 1019.

The Contractor shall not have access to the inlet drainage scuppers from Milne Creek (beneath the roadway) and no in stream work shall be allowed. The Contractor shall either remove the scupper in the existing combination concrete curb & gutter to a minimum of four (4") inches below the proposed subgrade elevation for the vertically adjacent appurtenance. The inlet drainage scuppers shall be capped with a PVC cap, and the cap shall be grout in place to insure the scupper is sealed to the satisfaction of the Engineer. The hole excavated shall be backfilled with IDOT gradation CA-7.

**Basis of Payment.** This work shall be paid for at the contract unit price per each for INLETS ABANDONED, SPECIAL which shall include all equipment, materials, and labor to perform the work as specified herein.

**ADJUST SANITARY SEWER CLEANOUT**

**Description.** This work shall consist of adjusting existing sanitary sewer cleanouts to the proposed finished grade in accordance with Sections 563 and 602 of the Standard Specifications and with the Standard Specifications for Water and Sewer Construction in Illinois, except as modified herein

Top sections, extensions and/or caps compatible with the existing cleanout may be required to adjust the cleanout to the final grade. Replacement of damaged or missing caps shall be included in the cost of this item.

The contractor shall be required to expose the cleanout riser pipe and either extend or shorten the riser as necessary to meet the proposed final grade. New riser pipe material shall be PVC ASTM D-2241 SDR 26 and shall be connected to the existing riser with mission couplings or methods approved by the Engineer. Connections to the existing riser pipe shall be included in the cost of this item regardless of the approved connection method.

**Basis of Payment.** This work shall be paid for at the contract unit price per each for ADJUST SANITARY SEWER CLEANOUT which shall include all equipment, materials, and labor to perform the work as specified herein.

### **DRAINAGE STRUCTURES TO BE CLEANED AND GROUTED**

**Description.** This work shall consist of cleaning, repairing and re-mortaring drainage structures at locations shown on the plans or as directed by the ENGINEER. These items of work shall be performed as directed by the ENGINEER. The word STRUCTURES shall be understood to mean catch basins, inlets, or manholes inclusive.

**Construction Requirements.** The structure shall be cleaned of debris and cracked and/or broken mortar shall be removed. If there is flow in the structure, inlet pipes must be plugged temporarily and water pumped out to perform the work. The CONTRACTOR shall repair and re-mortar around pipes; joints between blocks, sections, and rings; and under the frame as required to rehabilitate the structure. Disposal of debris removed from the structure shall be included in the cost of this item.

**Basis of Payment.** This work will be paid for at the contract unit price per each for DRAINAGE STRUCTURES TO BE CLEANED AND GROUTED, which shall include all equipment, materials, and labor to perform the described work.

### **HOT-MIX ASPHALT DRIVEWAY PAVEMENT**

**Description.** This work shall consist of the installation of Hot-Mix Asphalt Driveway Pavement, of the thickness specified at locations shown on the plans. This work shall be performed in accordance with the plans, the IDOT D1 Standards BD-01 and BD-02, and applicable provisions of Sections 406 and 423 of the Standard Specifications, except as modified herein.

For private entrances, the Contractor shall place and compact 2-inches of HMA Surface Course, Mix "D", IL-9.5, N50 over 6-inches HMA Base Course (HMA Binder IL-19.0, N50). For commercial entrances, the Contractor shall place and compact 2-inches of HMA Surface Course, Mix "D", IL-9.5, N50 over 8-inches HMA Base Course (HMA Binder IL-19.0, N50).

**Basis of Payment.** This work shall be paid for at the contract unit price per square yard for HOT-MIX ASPHALT DRIVEWAY PAVEMENT, of the total driveway thickness specified which price shall include all materials, equipment, and labor to perform the work as specified herein.

### **TEMPORARY SIDEWALK**

**Description.** This work shall consist of the installation of temporary Portland Cement Concrete Sidewalk in locations as shown on the plans and as directed by the Engineer in accordance with applicable provisions of Section 424 of the Standards Specifications, the Maintenance of Traffic Plans, and Highway Standard 701801.

The temporary sidewalk shall be constructed with a minimum of 4" of PCC on 2" of compacted CA-6 stone. Temporary sidewalk shall be installed in accordance with ADA and PROWAG requirements. Earth excavation required to install temporary sidewalk shall be included in the cost of this item.

Temporary sidewalk shall be removed once all construction stages requiring it have been completed. Temporary sidewalk removal shall be paid for as SIDEWALK REMOVAL.

**Basis of Payment.** This work shall be paid for at the contract unit price per square foot for

TEMPORARY SIDEWALK which price shall include all necessary materials, equipment, and labor to perform the work as specified herein.

**DUST CONTROL WATERING**

**Description.** This work shall be performed in accordance with Section 107 of the Standard Specifications with the following alterations.

**107.36 Dust Control.** Delete section (d) of paragraph 4 and add the following: Dust shall be controlled by the uniform application of sprinkled water and shall be applied only when directed and in a manner approved by the Engineer. All equipment used for this work shall meet with the Engineer's approval and shall be equipped with adequate measuring devices for determining the exact amount of water discharged. All water used shall be properly documented by ticket or other approved means.

**Method of Measurement.** This work will be measured in units of gallons of water applied. One unit is equivalent to 1,000 gallons of water applied. The Contractor's attention is called to Article 107.18 of the Special Provisions.

**Basis of Payment.** This work will be paid for at the contract unit price per UNIT for DUST CONTROL WATERING, which price shall include all labor, water, and equipment for controlling dust as herein specified.

**TEMPORARY INFORMATION SIGNING**

Effective: November 13, 1996  
Revised: January 29, 2020

**Description.** This work shall consist of furnishing, installing, maintaining, relocating for various states of construction and eventually removing temporary informational signs. Included in this item may be ground mount signs, skid mount signs, truss mount signs, bridge mount signs, and overlay sign panels which cover portions of existing signs.

**Materials.** Materials shall be according to the following Articles of Section 1000 - Materials:

	<u>Item</u>	<u>Article/Section</u>
a.)	Sign Base (Note 1)	1090
b.)	Sign Face (Note 2)	1091
c.)	Sign Legends	1091
d.)	Sign Supports	1093
e.)	Overlay Panels (Note 3)	1090.02

- Note 1. The Contractor may use 5/8 inch (16 mm) instead of 3/4 inch (19 mm) thick plywood.
- Note 2. The sign face material shall be in accordance with the Department's Fabrication of Highway Signs Policy.
- Note 3. The overlay panels shall be 0.08 inch (2 mm) thick.

**GENERAL CONSTRUCTION REQUIREMENTS**

**Installation.** The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 701.14 and Article 720.04. The signs shall be 7 ft (2.1 m) above the near edge of the pavement and shall be a minimum of 2 ft (600 mm) beyond the edge of the paved shoulder. A minimum of two (2) posts shall be used.

The attachment of temporary signs to existing bridges, sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs and/or structures due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

**Method of Measurement.** This work shall be measured for payment in square feet (square meters) edge to edge (horizontally and vertically).

All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

**Basis Of Payment.** This work shall be paid for at the contract unit price per square foot (square meter) for TEMPORARY INFORMATION SIGNING.



**STORM SEWER (WATER MAIN REQUIREMENTS)**  
**STORM SEWERS, WATER MAIN QUALITY PIPE**

**Description.** This work shall include installation of water main-quality storm sewers at locations shown on the plans and as directed by the Engineer. This work shall conform to applicable sections of the Standard Specifications and the Standard Specifications for Water and Sewer Main Construction in Illinois (Sixth Edition) and the City Standard details.

The following pipe types are acceptable for use as STORM SEWERS (WATER MAIN QUALITY PIPE):

- PVC pressure pipe and fabricated fittings (water main quality) in accordance with AWWA C-900 for sizes 4"-12" or AWWA C-905 for sizes 14"-48". PVC pipe joints shall be flexible elastomeric seals per ASTM D-3139 and F-477.
- Ductile Iron pipe (Class 50) conforming to ANSI/AWWA C151/A.21.51 with joints conforming to ANSI/AWWA C111/A.21.11.

Connections to existing sewer pipe shall be made with poured concrete collars, unless otherwise allowed by the Engineer.

**Basis of Payment.** This work shall be paid for at the contract unit price per foot for STORM SEWER (WATER MAIN REQUIREMENTS) or STORM SEWERS, WATER MAIN QUALITY PIPE, of the type and diameter specified, which price shall include all necessary materials, equipment, and labor to perform the work as specified herein.

## **SANITARY SEWER**

**Description:** This work shall consist of the installation of sanitary sewers of the diameter specified. The sanitary sewer service shall connect to the existing sanitary sewer main and be constructed to the limits of the proposed sewer or water main conflict at which point a sanitary sewer clean out shall be installed.

**Materials:** Flexible sanitary sewer pipe and fittings shall be PVC, SDR 26, having a minimum cell classification of 12454 per ASTM D1784 and meeting the requirements of ASTM D3034. The pipe joints and fittings shall be elastomeric seals meeting the requirements of ASTM D3212 and F 477. Rigid sanitary sewer pipe and fitting shall be Ductile Iron Class 52 meeting the requirements of AWWA C151. Pipe joints and fittings shall be elastomeric seals/push on joints meeting the requirements of AWWA C111 and C600.

**Construction:** Installation of sanitary sewer shall be accomplished to line and grade in the trench only after it has been dewatered and the foundation and/or bedding has been prepared in accordance with Section 20 of the Standard Specifications for Water and Sewer Construction in Illinois. Mud, silt, gravel and other foreign material shall be kept out of the pipe and off the jointing surface.

All pipe laid shall be retained in position so as to maintain alignment and joint closure until sufficient backfill has been completed to adequately hold the pipe in place. All pipe shall be laid to conform to the prescribed line and grade specified.

All sanitary sewers shall be pressure and deflection tested in accordance with Section 31 of the Standard Specifications for Water and Sewer Main Construction in Illinois (Sixth Edition). Deflection testing shall be done no sooner than 30 days after the pipe has been backfilled. No sooner than 30 days after the sewers have been installed, they shall be inspected by a closed circuit color television to determine if any pipe installation defects have occurred, and to determine the location of services. One copy of the video DVD and flash drive and written inspection report shall be furnished to the City. Any bellies in the pipe identified by the City during the review of the television reports and videos shall be corrected prior to the City accepting ownership. Televising shall pan all service locations to check for issues.

The pipe bedding shall be a minimum of six (6") inches in depth and shall be placed on a sound trench bottom. If unsuitable material is encountered in the trench bottom, the CONTRACTOR shall remove the unsuitable material until suitable material is encountered or as directed by the ENGINEER. All unsuitable material removed shall be replaced with the bedding material.

After the pipe has been laid to the specified line and grade, the CONTRACTOR shall place haunching material on each side of the installed pipe to a level equal to the spring line of the pipe. The CONTRACTOR shall verify that the pipe is adequately supported for the entire length of the installed pipe. Following the haunching of the pipe, the initial backfill shall be placed to a depth that is a minimum of 12 inches above the top of the installed pipe.

The bedding, haunching, and initial backfill material shall have a gradation that meets the minimum requirements of IDOT gradation CA-7.

Upon completion of the initial backfill, the remainder of the trench shall be backfilled to the natural line of finished surface as rapidly as the conditions will permit. The trench shall be backfilled with TRENCH BACKFILL where the trench is within five (5) feet of any existing or proposed pavements, curb, gutter, or sidewalks.

All fittings shall be factory produced and shall be designed for installation on the pipe used. Fittings shall be of the same quality and material as the pipe used.

Connections shall be made to all existing and proposed sanitary sewer services with new tees. This work shall be considered incidental to SANITARY SEWERS, of the diameter specified.

Sewer plugs shall be installed at the downstream ends of all new sewers and left in place until the City accepts the sewers. Sewer plugs shall be installed at upstream ends of new sewers at the end of each day's work.

**Measurement and Payment:** This work will be paid for at the contract unit price per foot for SANITARY SEWERS, of the diameter specified which price shall include all equipment, materials, and labor to perform the work as specified herein and all pipe, fittings, excavation, removal and disposal of all excavated material, bedding, haunching and trench backfill materials, testing, televising and inspection of sewers, connection of services, sewer maintenance until City acceptance, and sewer plugs.

## **TEMPORARY PAVEMENT**

Effective: March 1, 2003

Revised: April 10, 2008

**Description.** This work shall consist of constructing a temporary pavement at the locations shown on the plans or as directed by the engineer for maintenance of traffic (for all stages and phases).

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

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

The removal of the Temporary Pavement, if required, shall conform to Section 440 of the Standard Specification.

**Method of Measurement.** Temporary pavement will be measured in place and the area computed in square yards (square meters).

**Basis of Payment.** This work will be paid for at the contract unit price per square yard (square meter) for TEMPORARY PAVEMENT.

Removal of temporary pavement will be paid for at the contract unit price per square yard (square meter) for TEMPORARY PAVEMENT REMOVAL.

## **STEEL CASINGS**

**Description.** This work shall consist of installing steel casing pipe in open cut trench at the locations as shown on the plans and as directed by the Engineer.

**Materials.** Casing pipe and joints shall be made of metal, and of leakproof construction. Casings shall be capable of withstanding the loads superimposed upon them. Steel pipe shall have minimum yield strength of 35,000 pounds per square inch. All casing pipe shall be manufactured of new billet steel, cylindrical, with smooth bituminous coated walls inside and outside. Steel casing pipe shall conform to ASTM A53 Grade B, ASTM A139 Grade B, or pipe fabricated in accordance with AWWA C200 using ASTM A36 steel.

**Construction requirements.** Steel casing pipe shall be installed into place and shall include all things necessary, but not limited to, excavation sheeting/bracing, dewatering, pumping, welding, backfilling and compacting all as required for the steel casing pipe installation. During installation of the steel casing pipe and as additional lengths of steel casing pipe are placed end to end, the ends of the steel casing pipe shall be welded together so that the completed casing forms a continuous length. Ends shall be plugged in accordance with the applicable City Standard Detail.

The water main (carrier pipe) shall be provided with a carrier pipe support system to position the carrier pipe at the indicated elevations within the casing. The carrier pipe support system shall be Powerseal Casing Chock, model 4810, stainless steel spacers consisting of 4 gauge, type 304 stainless steel shells, PVC liner, high molecular weight polymer runners, and stainless steel bolts and lock nuts. A minimum of 3 spacers shall be provided per carrier pipe length, on 6' centers.

Once the carrier pipe has been installed and pressure tested, the annular space between the carrier pipe and casing pipe at both ends shall be sealed. The end seals shall be constructed utilizing concrete brick laid lengthwise with mortar or premanufactured rubber end seals made specifically for this purpose.

The carrier pipe shall be installed by pushing and pulling it into place in such a manner that there is no opportunity for a joint to be opened. All joints shall be restrained.

The carrier pipe support system and all additional work to install the ductile iron water main in the casing shall be included in the cost of the steel casing. The ductile iron water main shall be paid for separately as DUCTILE IRON WATER MAIN, of the size specified.

Trench backfill shall be installed in accordance with Standard Specifications for TRENCH BACKFILL and as shown on the detail in the plans.

**Measurement and Payment.** This work will be measured and paid for at the contract unit price per foot for STEEL CASINGS, of the size specified, which price shall include all labor, equipment, and material necessary to complete the specified work. Payment for placement and compaction of TRENCH BACKFILL shall be paid for separately.

### **TEMPORARY TRAFFIC SIGNAL TIMING**

Effective: May 22, 2002

Revised: July 1, 2015

890.02TS

#### **Description.**

This work shall consist of developing and maintaining appropriate traffic signal timings for the specified intersection for the duration of the temporary signalized condition, as well as impact to existing traffic signal timings caused by detours or other temporary conditions.

All timings and adjustments necessary for this work shall be performed by an approved Consultant who has previous experience in optimizing Closed Loop Traffic signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants.

The following tasks are associated with TEMPORARY TRAFFIC SIGNAL TIMING.

- (a) Consultant shall attend temporary traffic signal inspection (turn-on) and/or detour meeting and conduct on-site implementation of the traffic signal timings.

- (b) Consultant shall be responsible for making fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
- (c) Consultant shall provide monthly observation of traffic signal operations in the field.
- (d) Consultant shall provide on-site consultation and adjust timings as necessary for construction stage changes, temporary traffic signal phase changes, and any other conditions affecting timing and phasing, including lane closures, detours, and other construction activities.
- (e) Consultant shall make timing adjustments and prepare comment responses as directed by the Area Traffic Signal Operations Engineer.
- (f) Return original timing plan once construction is complete.

**Basis of Payment.**

The work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL TIMING, which price shall be payment in full for performing all work described herein per intersection. When the temporary traffic signal installation is turned on and/or detour implemented, 50 percent of the bid price will be paid. The remaining 50 percent of the bid price will be paid following the removal of the temporary traffic signal installation and/or detour.

**PRESSURE REDUCING VALVE VAULT**

**Description.** This work shall consist of the installation of the PRESSURE REDUCING VALVE VAULT located at Station 67 + 67.63 near Summit Road. The work includes installation of a pre-manufactured steel pressure reducing vault, control panel with electrical service entrance and SCADA telemetry panel, and YARD PIPING within the defined limits of the PRESSURE REDUCING VALVE VAULT. Work shall be completed in accordance with applicable City Standard Details.

**Construction Requirements.** The work shall be completed in accordance with the PRESSURE REDUCING VALVE VAULT Drawings and the PRESSURE REDUCING VALVE VAULT Technical Specifications included herein.

YARD PIPING work within the limits of PRESSURE REDUCING VALVE VAULT shall conform with the Special Provisions for:

- DUCTILE IRON WATER MAIN
- PRESSURE TESTING OF WATER MAINS
- DISINFECTION OF WATER MAINS
- WATER VALVES
- WATER MAIN FITTINGS
- FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX
- WATER MAIN REMOVAL
- ABANDON EXISTING WATER MAIN
- SHUTDOWN CONNECTION TO EXISTING WATER MAIN
- TEMPORARY WATER SHUTDOWNS

The limits of YARD PIPING work for the PRESSURE REDUCING VALVE VAULT shall be the water main work shown on the Drawings from the branch of the 12-inch by 12-inch by 10-inch tee on the main line at Station 67 + 59.42 to the branch of the 12-inch by 12-inch by 12-inch tee on the main line at Station 67 + 83.30. These limits include the YARD PIPING work which connects to the PRESSURE REDUCING VALVE VAULT structure, and the YARD PIPING work which connects to the existing 8-inch main at Station 67 + 67.53.

The Special Provisions for YARD PIPING work within the limits of PRESSURE REDUCING VALVE VAULT shall be modified such that Measurement and Payment for YARD PIPING work within the limits of PRESSURE REDUCING VALVE VAULT is included in the price for the PRESSURE REDUCING VALVE VAULT. YARD PIPING work within the limits of the PRESSURE REDUCING VALVE VAULT will not be paid at the prices for water main Special Provisions that are listed under this heading.

**Measurement and Payment.** Measurement will not be made for this work. This work will be paid for at the contract price per each PRESSURE REDUCING VALVE VAULT. This price shall include the cost of all work shown on the PRESSURE REDUCING VALVE VAULT Drawings and specified in the PRESSURE REDUCING VALVE VAULT Special Provision. The per each price shall include YARD PIPING as described within this PRESSURE REDUCING VALVE VAULT Special Provision.

All storm sewer relocation, trench backfill, pavement removal and replacement and other surface restoration items as shown on the plans and specified herein shall be paid for separately.

Granular Cradle (CA-7) from four inches (4") below the bottom of the pipe to twelve inches (12") above the top of the pipe will not be measured for payment but shall be considered as included in the contract price for PRESSURE REDUCING VALVE VAULT.

The price for PRESSURE REDUCING VALVE VAULT shall also include any and all incidental items such as temporary plugs, corporation stops (for testing), water pumps, gauges, meters and laboratory test costs, and all other items necessary to complete this work as specified.

## **PRESSURE REDUCING VALVE VAULT TECHNICAL SPECIFICATIONS**

### SECTION 01 33 00

#### EQUIPMENT SUBMITTALS

#### PART 1- GENERAL

##### 1.01 SCOPE

- A. This Section establishes minimum requirements and procedures for Equipment Submittals made by the Contractor for materials and equipment provided for under the Work of this Contract. Specific details for additional drawings, data and information to be submitted shall be in accordance with the applicable requirements of other Sections of these Specifications.
- B. Acceptable Manufacturers and Equipment Suppliers for various items of equipment are specified in respective Sections of these Contract Documents. For convenience of designation in the Contract Documents, certain equipment, articles, materials, and processes are designated by manufacturer trade name or catalog name and number.

##### 1.02 SUBMITTAL SCHEDULE

At the preconstruction conference meeting, the Contractor shall, within 10 days after receiving the Notice to Proceed, prepare and submit for review a detailed list of all the submittals which he/she proposes to make to meet the requirements stated herein and those cited in other Sections of the Contract Documents including the dates on which he/she proposes to make such submittals. The list shall include Working Drawings, Field Detail Drawings, Project Record Documents, Quality Control Procedures, and all other items for which a submittal is required. The list shall include identifying references for each item to relate it to the specific item of the Contract Documents.



With each revision or certification of the Construction Schedule, the Contractor shall either revise this schedule of submittals and submit it for review or certify that the previously furnished schedule is still in effect.

After the Submittal Schedule is reviewed by the City's Representative, it shall become the basis for the submittal of all items by the Contractor.

1.03 SUBMITTAL REQUIREMENTS

A. General

The Contractor shall furnish for review his/her Submittals as outlined herein and in the Specifications. Submittals shall confirm compliance with the requirements of the Contract Documents. Submittals of equipment drawings shall be made prior to the fabrication of the equipment. The sequence of submission shall be such that information is available for review of each Submittal when it is received. All Submittals furnished formally shall bear the Contractor's approval stamp or a certification. The stamp or certification shall be signed by an authorized representative of the Contractor. The Contractor's stamp or certification on any Submittals shall constitute a representation to the City that the Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or that he/she assumes full responsibility for doing so, and that he/she has reviewed and coordinated each Submittal with the requirements of the Contract Documents. Before submitting any drawings for review, the Contractor shall obtain approval of the list of drawings he/she proposes to submit, showing sequence of submittal and submittal dates. All drawings shall be submitted in accordance with the Submittal Schedule as previously specified herein.

B. All submittals shall be addressed to the City or as otherwise directed by the City.

C. Outline Drawings

The Contractor shall submit outline drawings of the equipment to be furnished together with estimated weights, operating forces, external forces, anchoring details, and sufficient overall dimensions, to facilitate preparation of final designs of the structures into which the equipment is to be incorporated.

D. Wiring Diagrams

The Contractor shall submit complete schematic and full-line wiring diagrams for all furnished equipment. The Contractor shall furnish drawings of switch developments for all instrument and control switches and internal connection diagrams for all instruments, relays, regulators, and other devices. One print of each wiring diagram will be returned on which will be marked the wire notations and cable numbers for outgoing circuits where this information is not otherwise available to the Contractor. The Contractor shall

add this information to his/her drawings. Adequate space shall be allowed on the wiring diagrams to accomplish this.

E. Detail Drawings and Erection Drawing

Before proceeding with fabrication or manufacture of the material and equipment designed and furnished by the Contractor, the Contractor shall submit the designs, design computations (when requested), apparatus ratings, detailed specifications, general assembly drawings, sufficient subassembly drawings, details, and control and wiring diagrams to demonstrate fully that all parts will conform to the provisions and intent of the Contract Documents and to the requirements of their installations, operations, and maintenance. These drawings shall substantially conform to the Bid and Contract Drawings and shall show all necessary dimensions; all field joints and subassemblies in which the Contractor proposes to ship the equipment; locations and sizes of auxiliary connections for oil, grease, water and air; and the terminal boxes and wire sizes for electrical circuits. Before proceeding with fabrication or purchase, the Contractor shall submit shop drawings and/or catalog cuts as appropriate of items designed but not detailed on the Contract Drawings including, but not limited to structural steel and metal frames, covers, and gratings.

F. Field Detail Drawings

Layout drawings for any and all embedded components of the equipment such as but not limited to, piping, conduit, anchor bolts/plates, thimbles, etc. shall be submitted. These drawings shall be based on the Contract Drawings and shall contain sufficient detail for construction in the field.

G. Review of Drawings

1. Four print copies on durable paper with dark lines on a white background and one durable paper type reproducible shall be furnished of each drawing submitted. Contractor shall also submit drawings in Portable Document Format (PDF) on a flash drive or DVD or on a drop box site approved at the Preconstruction Conference. The City may at its sole discretion waive or reduce the number of hard copy drawings to be submitted in favor of PDF's at the Preconstruction Conference. All drawings submitted shall, insofar as practicable, be of one standard size, measuring approximately 24 x 36 inches. The Contractor's drawings shall have a blank area of 4 x 4 inches adjacent to the drawing title block for the review stamp of the City's Representative. The Contractor shall verify by inspection of sample reproductions that good legible reproductions can be obtained from the reproducible before submittal.
2. Within 14 days of receipt of shop drawings or manufacturer's data, the City's Representative will return one copy of each drawing and/or data sheet marked to indicate the result of the City's Representative's review, as follows:

- a. "REVIEWED" - Revision of drawing or data will not be required.
  - b. "REVIEWED WITH CORRECTIONS" - Contractor shall revise the drawings or data and shall submit four print copies and one reproducible copy for City's Representative's records.
  - c. "REVISE AND RESUBMIT" - Contractor shall revise the drawing or data and shall resubmit the revised drawing or data to the City's Representative for review.
  - d. "REJECTED" - Drawings are non-conforming and do not meet intent of Specifications.
3. Copies marked "REVIEWED" or "REVIEWED WITH CORRECTIONS" authorize the Contractor to proceed with construction or fabrication covered by those drawings or data sheets with corrections, if any, incorporated.
  4. Review will not relieve the Contractor of responsibility for conformity to the Contract Documents and correct detail and fit of parts when installed.
  5. If minor revisions are made after a drawing has been returned to the Contractor marked "REVIEWED", the Contractor shall furnish without delay one print copy and one reproducible copy subsequent to each revision. No major revision affecting the design shall be made after a drawing has been marked "REVIEWED" without resubmitting the drawing.
  6. When prints of drawings have been marked "REVIEWED WITH CORRECTIONS" or "REVISE AND RESUBMIT" the Contractor shall make the necessary corrections and submit four print copies and one paper-type reproducible. Every revision shall be shown by number, date, and subject in a revision block, and in addition, each revised drawing shall have its latest revision clearly indicated. Submitted drawings which do not illustrate these indications will be considered non-conforming.
  7. The applicable parts of the requirements of the above paragraphs with reference to the drawings shall apply equally to design data, catalog cuts, illustrations, printed specifications, draft reports or any other submittals furnished for review.
  8. The Contractor shall make any changes in the designs which are necessary to make the equipment conform to the provisions and intent of the Contract Documents, without additional cost to the City.
  9. Should an error be found in a Contractor's drawing during the erection of structures or installation of equipment, the correction, including any field

changes found necessary, shall be noted on the drawing, and it shall be resubmitted for review, and recorded as outlined above.

10. Resubmittal of Drawings and Data: Contractor shall accept full responsibility for the completeness of each resubmittal. Contractor shall verify that all corrected data and additional information previously requested by Engineer are provided on the resubmittal.

When corrected copies are resubmitted, Contractor shall in writing direct specific attention to all revisions and shall list separately any revisions made other than those called for by Engineer on previous submissions.

Requirements specified for initial submittals shall also apply to resubmittals. Resubmittals shall bear the number of the first submittal followed by a letter (A, B, etc.) to indicate the sequence of the resubmittal.

If more than one resubmission is required because of failure of Contractor to provide all previously requested corrected data or additional information, Contractor shall reimburse City for the charges of Engineer for review of the additional resubmissions. This does not include initial submittal data such as shop tests and field tests which are submitted after initial submittal.

Resubmittals shall be made within 30 days of the date of the letter returning the material to be modified or corrected, unless within 14 days Contractor submits an acceptable request for an extension of the stipulated time period, listing the reasons the resubmittal cannot be completed within that time.

Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the Contract Times unless delay of the Work is directly caused by a change in the Work authorized by a Change Order or by failure of Engineer to review any submittal within the submittal review period specified herein and to return the submittal to Contractor.

#### H. Record Drawings

Prior to completion of the Work under the Contract Documents, the Contractor shall furnish one complete set of full-size permanent reproducible copies of approved quality and type and 2 full size sets of prints of all Contractor's drawings and equipment as finally built, including any field changes. Contractor shall also submit Record Drawings in Portable Document Format (PDF) on a flash drive or DVD. Record Drawings shall be signed and sealed by a licensed surveyor or engineer.

#### I. Operating and Maintenance Instructions

1. Three sets of detailed operating and maintenance instruction manuals and two CD's containing PDF's which shall include reduced-size copies of applicable drawings, applicable parts lists and catalogs covering all equipment furnished and which may be needed or useful in operation, maintenance, repairs, dismantling or assembling, and for repair and identification of parts for ordering replacements, shall be furnished as specified. The City may at its sole discretion waive or reduce the number of hard copy operating and maintenance instruction manuals to be submitted in favor of PDF's at the Preconstruction Conference.
2. Furnish operation and maintenance manuals for the various types of equipment and systems, as required by the Contract Documents. Unless otherwise indicated, a separate manual shall be furnished for each piece of equipment and/or system. The manual shall include complete information necessary to operate, maintain and repair the equipment and/or system and shall include the following specific requirements:
  - a. Table of contents and index.
  - b. Brief description of the equipment/system and principal components.
  - c. Starting and stopping procedures both normal and emergency.
  - d. Installation, maintenance, and overhaul instructions which shall include detailed assembly drawings with parts list and numbers, and recommended spare parts list with recommended quantity, manufacturer's price, suppliers address and telephone number.
  - e. Recommended schedule for servicing including technical data sheets that indicate weights and types of oil, grease or other lubricants recommended for use and their application procedures.
  - f. One copy of each component wiring diagram and the system wiring diagram showing wire size and identification.
  - g. One approved copy of each submittal with any changes made during construction properly noted including test certificates, characteristic curves, factory, and field test results.
  - h. For electrical systems include dimensioned installation drawings, single line diagrams, control diagrams, wiring and connection diagrams, list of material for contactors, relays and controls, outline drawings showing relays and controls, outline drawings showing relays, meters, controls and indication equipment mounted on the equipment or inside cubicles, control and protective schematics and recommended relay settings.

3. Submittal Requirements: Three preliminary copies of manuals and one set of PDF's shall be submitted no later than the date of shipment of equipment, and installation shall not begin until they are accepted by the City's Representative. Three approved copies and one set of PDF's of complete manuals shall be delivered to the City's Representative prior to City's Representative inspections and tests.

J. Language

All drawings, design data, reports, instructions, catalogs, illustrations, and printed specifications shall be submitted in English.

K. System of Units of Measurement

All units of measurement used shall be in the U.S. Customary System.

PART 2- PRODUCTS

(Refer to Paragraph 1.03, Submittal Requirements, of this Section.)

PART 3- EXECUTION

(Refer to Paragraph 1.02, Submittal Schedule, of this Section.)

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION

SECTION 01 91 58

FACILITY STARTUP

PART 1- GENERAL

1.01 SUMMARY

- A. This Section describes the Contractor's general equipment requirements for facility start-up.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Division 01, 26, 33, 40 and 44 of these CSI Specifications.
  - 2. Section 801 of the Standard Specifications.
  - 3. Conduct all tests, check out, start-up and related requirements as indicated in the Contract Documents, and as required by the City and manufacturer.
  - 4. Coordinate with all manufacturers.

1.02 SUBMITTALS

- A. Submit a detailed plan and schedule for start-up of each facility at least seven (7) days prior to the scheduled start-up of each facility. Start-up plan shall include:
  - 1. Schedules for manufacturers' equipment certifications.
  - 2. Schedules for submitting final Technical Manuals.
  - 3. Schedule for training City personnel.
  - 4. Electrical testing forms and inspector's review forms.
  - 5. Detailed schedule of operations to achieve successful pre-commissioning and commissioning.
  - 6. Checklists and data forms for each item of equipment.
  - 7. Designate a representative of the Contractor who has the authority to act in matters relating to start-up and has experience in testing gates.
  - 8. Start-up plan shall also designate the roles and responsibilities of any subcontractors that may be involved in start-up activities.
  - 9. Safety, start-up and testing procedures and proposed inspection and certification forms and records.
  - 10. Hydrostatic testing of water-holding structures and pipelines and other potable water equipment (as required).
  - 11. Schedule and plan shall indicate source of water, testing sequence and the disposal of the water following disinfection.

PART 2- PRODUCTS

No products are required in this Section.

PART 3- EXECUTION

3.01 CONTRACTOR'S REQUIREMENTS

- A. Provide the services of a qualified and experienced factory employed field service engineer from each equipment manufacturer:
  - 1. Ascertain that equipment has been installed in accordance with the manufacturer's recommended procedures.
  - 2. Ascertain that equipment is operational and ready for start-up.
  - 3. Make necessary repairs, corrections, and/or modifications prior to the scheduled start-up.
- B. Coordinate efforts of equipment field service engineers with construction activities.
- C. Perform the above services at least two weeks prior to the scheduled start-up.
- D. Perform the facility start-up procedures in the presence of the City and Engineer.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION



SECTION 26 00 10

GENERAL PROVISIONS FOR ELECTRICAL WORK

PART 1- GENERAL

1.01 SCOPE

- A. This Section describes the general provisions for the Work to be performed under Division 26 - Electrical, of this Contract as well as Division 33 - Utilities, where applicable. The Contractor shall comply with these general provisions and shall perform all Work in accordance with the Specifications contained in this Section, as supplemented by Specification in related Sections, and as shown on the Drawings. Related mechanical work shall be performed in accordance with the applicable provisions of Division 33.
- B. The following specifies the minimum general requirements by which the Contractor shall furnish, fabricate, deliver, erect, install, connect and test electrical materials, equipment and systems specified in the respective Sections of Division 26 and shown on the Drawings, so as to constitute a complete and operating electrical installation.
- C. The Contractor shall provide all necessary coordination between the suppliers of the specified equipment so as to provide a well-designed and satisfactory operating facility to the City. The Contractor is advised that these Specifications are not indented to cover every and all details of the Work. In case(s) where details related to the specified Work are not covered by these Specifications, it shall be the responsibility of the Contractor to include and execute such coordination and Work at no additional cost to the City.
- D. Items of equipment furnished and installed as a part of the Work under other Sections of the Specifications shall be connected and wired as a part of the Work under this Section.
- E. All operating limits of electrical apparatus whether furnished under this Section or in other Sections of the Specifications shall be adjusted in the field to meet the operating conditions reviewed by the City's Representative and as required. This shall include settings of all overcurrent and trip devices, limit switches, timers, and control device adjustments, etc.

1.02 QUALITY ASSURANCE

A. Acceptable Manufacturers and Equipment Supplier

- 1. As shown on the Drawings and/or as specified hereinafter in subsequent Sections.

2. Acceptable manufacturers for various items of equipment are specified in respective Sections of these Contract Documents. For convenience of designation in the Contract Documents, certain equipment, articles, materials, and processes are designated by manufacturer trade name or catalog name and number.

B. Applicable Standards

1. All electrical work furnished and installed under this Section shall be in strict compliance with the ordinances and bylaws of the City, State and/or any other political subdivision thereof governing the installation of the electrical work on this Project. In the absence of other more stringent authority, the electrical work shall conform to the requirements of the National Electrical Code.
2. The Contractor shall conform to the latest safety standards as required by the Occupational Safety and Health Administration (OSHA) in all Work performed. In addition, all equipment and materials shall meet all applicable OSHA requirements.
3. All equipment shall be U.L. rated.

1.03 SUBMITTALS

- A. The Contractor shall comply with the requirements specified in Section 01 33 00 - Equipment Submittals, and as specified herein.
- B. The Contractor shall not install any electrical work for any item of equipment specified under this or other Sections of the Contract until shop drawings of such equipment, reviewed by the City's Representative, are made available to him/her. Any such Work installed by the Contractor prior to the City's Representative review will be the responsibility of the Contractor and any modification of the electrical work necessary to meet the equipment requirements shall be made without additional compensation.
- C. Before fabrication and assembly of equipment, submit the following:
  1. Front and rear elevations showing dimensions and the arrangement for each cubicle.
  2. Plan and section views, including dimensions and mounting details.
  3. Details of bus, connections, terminals, etc., including the complete ground bus arrangement and enclosure ground connections.
  4. Single line diagram of equipment and control schematic diagram.

5. Wiring Diagrams

- a. Connection diagrams for the wiring of equipment in each cubicle.
- b. Interconnection diagrams for the wiring to equipment in other cubicles. Clearly identify the terminal block points for the external wiring to be routed in or out of the cubicles. Provide adequate space on the wiring diagrams for additions (by the Contractor) or cable and wire designations for that external wiring to be routed in or out of the cubicles at the terminal block.

6. Bill of Material.

7. Factory test procedures and protocols.

D. Prior to shipment of the equipment, submit for record and distribution:

1. All drawings as finally reviewed and corrected.
2. Recommended storage instructions.
3. Installation instructions and operating and maintenance manuals.
4. Spare parts bulletins.
5. Factory test reports (certified).
6. Booklet on maintenance procedures for circuit breakers and other equipment.
7. Field test procedures and protocols.

E. After final installation of the equipment the Contractor shall deliver a complete set of reproducible shop drawings of (including schematics, internal point-to-point and interconnecting) diagrams for all equipment and panels showing Work "as installed".

1.04 WARRANTY

All equipment (electrical and/or mechanical) specified by these Specifications shall be warranted and shall be provided with such warranties covering all parts and labor for a period of one (1) year from the date of Final Acceptance.

PART 2- PRODUCTS

2.01 GENERAL

A. Standard Products

The equipment furnished shall be standard products in production by reputable companies regularly engaged in the manufacture of high-quality equipment of the type specified. Similar equipment shall have been in satisfactory and successful operation for a period of at least two years. All parts of the specified equipment shall be so designed as to be especially adapted for the service required and shall be proportioned, enclosed, or guarded as to have ample and liberal strength and stability to withstand, without damage, the stresses to which they may be subjected during erection or operation. The component parts of duplicate items shall be fabricated on a principle of interchangeability to facilitate ready replacement.

B. Materials

All material incorporated in the equipment shall be new and of first-class quality, free from injurious defects and imperfections, and of the classifications and grades designated. Materials not specifically designated herein shall be subject to the review of the Engineer and shall be suitable for the purpose intended.

2.02 RATINGS

The sizes, ratings, capacities, and performance characteristics of various specified items of equipment and devices are based on currently available standard products, which are available through United States manufacturers. In no case shall the size, rating, capacity or performance characteristic be less than that specified unless approved in writing by the City. Ratings and performance characteristics, where applicable, of various devices and items of equipment are specified in respective Sections of these Specifications. All electrical equipment shall be UL listed.

2.03 DETAILS OF CONSTRUCTION

- A. Electrical work shall meet requirements of these Specification, product manufacturer's instructions, recommended tolerances and recommended procedures, and as indicated by final reviewed submittals for the Work.
- B. Materials shall be of size and thickness indicated. If not indicated, size and thickness shall be selected to provide strength and durability in finished Work for intended application. Work to dimensions indicated, using proven fabrication details.
- C. Product finishes, surfaces and edges shall be smooth and free of marks, burrs, seams, roughness and like defects or conditions.
- D. Other electrical-mechanical product construction details shall be in accordance with the best engineering practices, applicable code requirements and as specified and/or other Sections of these Specifications.

PART 3- EXECUTION

3.00 GENERAL

- A. The Contract Drawings indicate the general details necessary for the complete electrical installation. It shall be the Contractor's responsibility to install all electrical work in a neat and workmanlike manner. The Contractor shall cooperate with others to permit the installation of all of the work without interferences. If changes become necessary to avoid interference between the Work installed under various Sections, the Contractor shall submit to the City's Representative, for review, the proposed changes and upon review by the City's Representative, proceed with the installation of such changes without additional cost to the City.
- B. The Contractor shall maintain at the site a set of black-line prints on which shall be accurately shown the actual installation of all Work done under Division 26 and any variation from the Contract Drawings as reviewed by the City's Representative including changes in sizes, locations, and dimensions shall be indicated thereon. At the conclusion of the Work, the Contractor shall furnish record drawings in accordance with the General Conditions and as specified herein.

3.01 FACTORY TEST AND INSPECTION

- A. All equipment shall be shop-assembled and tested in the manufacturer's shop in accordance with recognized standard practices. Factory tests and inspections shall be conducted to verify that the equipment is operating satisfactorily and in compliance with the Specifications.

3.02 INSTALLATION AND TESTING

- A. General: Examine the areas and conditions under which electrical work is to be installed or performed and remedy any conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.
- B. Existing Facilities: Verify existence, location, and operation of existing electrical facilities to be abandoned, removed, altered, modified and/or temporarily relocated to allow activities during construction of the Work.
- C. Install electrical work. Meet requirements of these Specifications, product manufacturer's instructions, recommended tolerances, and recommended procedures and as indicated by final reviewed submittals for the Work.

3.03 PAINTING

- A. All specified equipment shall be shop-primed and painted in accordance with manufacturer's standard finish.
- B. The Contractor shall be responsible for coordination of the compatibility between manufacturer's standard finish and the field paint specified.

PART 4-      MEASUREMENT AND PAYMENT

4.01      MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02      PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION

SECTION 26 00 20

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1- GENERAL

1.01 SCOPE

In accordance with the Specifications contained in this Section and as shown on the Drawings, the Contractor shall furnish and install complete, and test, where specified, unless otherwise indicated, the following items of electrical material, equipment and systems for a complete operating electrical installation.

1. Electrical Conduit
2. Electric Outlets/Switches/Devices & Accessories
3. Electrical Motors & Accessories
4. Wire and Cable
5. Electrical Panel(s)/MCC's/Instrumentation
6. Grounding System

PART 2- PRODUCT

2.01 GENERAL

All equipment shall be new and shall be essentially standard products of the manufacturers regularly engaged in the production of the type of equipment specified herein. Like items shall be the product of a single manufacturer.

2.02 RATINGS/SIZES

(As specified in other Sections of these Specifications.)

2.03 DETAILS OF CONSTRUCTION

- A. All permanent foundation materials such as anchor bolts, either embedded in the concrete or required for anchoring, shall be furnished with the equipment. Approved types of expansion anchors may be used where practicable for small equipment.
- B. Each item of manufactured equipment furnished under these Specifications shall have a permanent nameplate affixed thereto in a readily visible place, showing the serial number, the name and address of the manufacturer, rated capacity, speed, electrical characteristics, and other pertinent data, as applicable. Nameplates of distributing agents only, will not be acceptable.
- C. Control panels shall be furnished with the equipment complete with terminal blocks,

wiring, and other miscellaneous devices as indicated or required by the intended operation of the equipment or by the Drawings or Specifications. The equipment shall include all auxiliary and accessory devices, such as auxiliary transformers, auxiliary relays, protective devices, and resistors, whether or not they are expressly specified or indicated on the Drawings. Adequate provisions shall be made to accommodate, support, and connect cables to the terminal blocks or point of attachment. The Contractor shall locate and arrange his/her terminal blocks so that the external cable connections can be made in a neat and proper fashion. Shielded cables shall be grounded at the panel end only and shall be terminated on terminal blocks. The shield terminations shall be subject to review.

- D. Control wiring in Control panels shall be Type SIS stranded copper conductors, #14 AWG minimum size, 600-V. Class D stranded wire shall be used for wiring across hinged joints. Wiring shall be neatly arranged, properly supported, and terminated at terminal blocks. At least 20% extra terminals shall be provided at each group of blocks. Control circuits and power circuits shall be completely separated by use of divided cubicles or barriers. Terminal blocks shall be 600-V furnished with covers and marking strips showing the wire designation on the wiring diagrams or as designated by the City's Representative. Not more than 2 wires shall be connected to any one terminal screw. Terminals shall be suitable for a maximum external conductor size of #8 AWG.
- E. The surfaces of the panel shall be bonderized (or otherwise treated so as to be substantially corrosion-resistant), primed and finished with 2 coats of the manufacturer's standard gray baked enamel applied in accordance with the manufacturer's directions. The interior surfaces shall be finished and painted in accordance with the standard practice of the equipment manufacturer. All surfaces to be painted shall be thoroughly cleaned, and all oil film and loose scale shall be removed before applying the first coat of paint. The color of the paint will be determined by the City. One gallon of finish paint used shall be furnished for touching up damaged surfaces after installation.
- F. Each meter, instrument, operating device, control switch, panel and circuit shall have a nameplate with engraved circuit designation mounted in a clearly visible location. If any of the foregoing devices do not have apparatus designation thereon that is visible from the front, a nameplate with engraved apparatus designation shall also be furnished. Nameplates shall be uniform in shape, size, finish and lettering and be made of laminated black and white micarta or clear plastic material with lettering embossed on the back side and filled-in with opaque paint. The width and depth of the lettering shall be so designed as to be legible from reasonable angles of observation. A typical nameplate sample shall be submitted to the City's Representative for review.
- G. The Contractor shall size, furnish and install all pads and anchorages required for electrical equipment. The necessary excavation, backfilling, concrete and reinforcing steel shall conform to the requirements of applicable codes and other Sections of these Specifications. The Contractor shall furnish and install all the anchor bolts, pipe sleeves, brackets, leveling and setting plates, etc. when and where required.



PART 3-      EXECUTION

3.01            INSTALLATION

The methods of installation of Contractor-furnished equipment and materials are described in subsequent Sections and shall in general be in accordance with the manufacturer's standard procedure and recognized engineering practices.

3.02            TESTS

- A. All electrical equipment, materials, and supplies shall have passed adequate routine factory tests. Field tests shall be made by qualified personnel, having thorough experience in previous jobs of similar scope, approved by the City. Field tests shall be made on electrical equipment or on each electrical installation or system as specified below, or as required to establish satisfactory operations and conformance with these Specifications. The tests shall be witnessed by the City's Representative. The Contractor shall give the City's Representative two weeks' notice in advance of the tests. The Contractor shall furnish all apparatus, materials, labor, and facilities for performing the required tests. Corrections for any defects shall be made by and at the expense of the Contractor to the satisfaction of the City's Representative. The Contractor shall submit test methods and a list of test equipment to be used for conducting these tests subject to the review of the City's Representative. Records of all tests made shall be kept by the Contractor and furnished to the City's Representative in triplicate, no later than 7 calendar days after each test is completed.
- B. Control circuits shall be tested prior to operational testing with the control circuits energized but with the controlled equipment disconnected or otherwise made inoperable. The control systems shall be checked for proper operation by actuating each contact which initiates a control operation, and then following the control sequence through the affiliated devices to ascertain that correct results are obtained with each condition of interlocking. The actuating of contacts as required to initiate an operation and to set up interlocking conditions shall be accomplished manually or by simulated operating conditions, whichever is applicable. At this time, adjustments shall be made as required to temperature switches, thermostats, pressure switches, flow switches, position switches, limit switches, auxiliary relays, timers and all other automatic control, interlocking and annunciation devices.
- C. After the individual items of wiring and equipment have been tested and proved satisfactory and the preliminary control tests have been completed, the equipment shall be further tested for satisfactory operation under normal operating conditions. The equipment shall be lubricated, balanced, aligned, adjusted and operated through sufficient sequences and for a sufficient length of time to establish, to the satisfaction of the City, that the equipment, including all safety and limit devices, has been correctly installed and operates properly.

- D. Specific tests to be performed in addition to the above tests are given in the Sections in which the equipment or system installation is specified.

3.03 PAINTING

(See Paragraph 2.03, E of this Section).

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION

SECTION 26 05 19

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1- GENERAL

1.01 SUMMARY

- A. Provide low-voltage electrical power conductors and cables as shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
  - 1. Documents affecting work under this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Division 01 - General Requirements of these Specifications.

1.02 QUALITY ASSURANCE

- A. Comply with the following requirements:
  - 1. NFPA 70 National Electrical Code (NEC).
  - 2. Local codes and ordinances.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 66 11.

PART 2- PRODUCTS

2.01 GENERAL

- A. Comply with the following standards:
  - 1. UL 83 and ICEA S-61-402 for thermoplastic insulated wire and cable.
  - 2. UL 44, ICEA S-19-81 and ICEA S-66-524 for rubber or rubber-like and cross-linked thermosetting polyethylene insulated wire and cable.
- B. Provide copper wire only.
- C. No underground splices allowed unless approved by the City or Engineer.

2.02 WIRE AND CABLE IN RACEWAY

- A. Power, light, and control conductors:

1. Insulation: Rated for 600 volts.
  - a. Use dual rated type THHN/THWN/MTW in temperature controlled cabinet locations and within buildings.
  - b. Use XLP Type USE in underground locations unheated areas and unheated concrete structures.
2. Use stranded wire unless otherwise noted.

2.03 JOINTS, TAPS, SPLICES, AND TERMINATIONS

- A. Conductors No. 10 AWG and smaller: Use twist type insulated wire nut solderless connectors.
- B. Conductors No. 8 AWG and larger: Use solderless compression type connectors of type that will not loosen under vibration or normal strains.
- C. Control and instrumentation conductors: Use crimp type insulated ring and spade terminal connectors where control wires are connected to screw terminals of equipment.
- D. Joints, taps, and splices located in enclosures subject to moisture: Use watertight splice kits.

2.04 UNIT DUCT

Description. This work shall consist of furnishing and installing preassembled cable in coilaible nonmetallic conduit (unit duct), complete with all splicing, identifications, and terminations. The unit duct shall be UL Listed and in accordance with NEC Article 354.

2.05 PERMANENT WIRE MARKERS

- A. Provide type-on, self-laminating vinyl, heat shrink polyolefin or nylon clip-sleeve, alpha-numeric, permanent wire markers.
  1. Use fine-line, black, permanent ink pens where field marking is necessary.
  2. Cloth tags are not acceptable.

2.06 COLOR CODING

- A. Provide color coded wires per NFPA 79 exterior of the control cabinet (refer to table below) and UL508A for interior control cabinet wiring.

<b>AC Conductor</b>	<b>120/208/240 V AC</b>	<b>277/480 V AC</b>
---------------------	-------------------------	---------------------

Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	White / Gray stripe
Equipment Grounds	Green	Green

PART 3- EXECUTION

3.01 INSTALLATION

- A. Install wiring system in accordance with manufacturer's recommendations.
- B. Install wire and cable in conduit unless otherwise shown on the Drawings.
- C. Trench and backfill for cables installed underground:
  - 1. Install cable in PVC coated rigid steel conduit under and 1-foot beyond all driveways and other pavement, and within a radius of 5 feet from all structures, trees, obstacles, etc.
  - 2. Provide suitable bracing for cable to withstand movement due to settlement where cable crosses a previous or new excavation.
  - 3. Seal all conduit entrances with watertight cable-conduit seals to prevent entrance of water into underground structures and caulk opposite end of conduit where conductors enter junction box, panel or electrical enclosure.
- D. Install warning tape along and above direct buried cable.
  - 1. Use red plastic, 6-inch wide tape.
  - 2. Imprinted "CAUTION - ELECTRIC CABLE BELOW".
  - 3. Bury approximately 1-foot below surface before final backfilling.
- E. Maintain barrier or conduit separation between power conductors and instrumentation conductors to avoid magnetic interaction where such conductors enter and pass through same manhole, handhole, casing pipe, box, or enclosure.
- F. Provide individual wiring compartments or barrier for separation between intrinsically safe and non-intrinsically safe conductors inside enclosures.
- G. The unit duct shall be installed directly from the reels on which the unit duct was shipped, in continuous spans without splicing the duct or cables.

Where unit duct passes through handholes or pull boxes, the polyethylene duct shall be cut open and the continuous, uncut and unspliced conductors exposed and looped within the handhole or pull box. The ends of the polyethylene duct must be sealed with duct sealant and mounted in the handhole to prevent entrance of moisture or contaminants.

When the unit duct is to be pulled, the pulling apparatus shall be attached to the duct and not to the cables. The pulling tension on the duct shall not exceed 550 lb (2.4 kN).

Unit duct extended to future light pole locations shall be of a length sufficient for cable

splices to be withdrawn a minimum of 18 in. (450 mm) out of pole handholes. The duct of the unit duct assembly shall extend a minimum of 12 in. (300 mm) into enclosure bases. Coordinate with existing City light/poles.

Unit duct shall only be used in locations shown on the plans. The unit duct shall be an assembly of insulated conductors which are factory pre-installed in a coilable nonmetallic conduit. The polyethylene duct shall be extruded directly over the cable at the factory in long continuous lengths. The unit duct shall be according to NEC Article 354.

3.02 WIRE AND CABLE IDENTIFICATION

- A. Install permanent wire markers on wire and cable in junction boxes, pull boxes, wireways, and wiring gutters of panels. Markers to identify wire or cable number.
- B. Provide schedule identifying various power and lighting conductors from power source to equipment or device served.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION

SECTION 26 05 23

CONTROL-VOLTAGE ELECTRICAL POWER CABLES

PART 1- GENERAL

1.01 SUMMARY

- A. Provide control-voltage wires, cables, and connectors as shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
  - 1. Documents affecting work under this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Division 01 - General Requirements of these Specifications.

1.02 QUALITY ASSURANCE

- A. Comply with the following requirements:
  - 1. NFPA 70 National Electrical Code (NEC).
  - 2. Local codes and ordinances.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 66 11.

PART 2- PRODUCTS

2.01 GENERAL

- A. Comply with the following standards:
  - 1. UL 83 and ICEA S-61-402 for thermoplastic insulated wire and cable.
  - 2. UL 44, ICEA S-19-81 and ICEA S-66-524 for rubber or rubber-like and cross-linked thermosetting polyethylene insulated wire and cable.
- B. Provide tinned copper wire only.

2.02 WIRE AND CABLE

- A. Shielded instrumentation cable:
  - 1. Conductors: Stranded No. 16 AWG tinned copper (min.), or as shown on plans.



2. Insulation: Polyethylene or fluorinated ethylene propylene (FEP), color coded, rated for 300 volts.
  3. Jacket: Polyvinyl chloride or FEP.
  4. Shielding: Aluminum polyester, 100 percent coverage.
    - a. Includes stranded No. 20 AWG tinned copper drain wire.
  5. Provide Belden copper instrumentation cable systems:
    - a. For 2-conductor requirements:
      - (1) Belden No. 8760 suitable for indoor.
      - (2) Belden No. 88760 suitable for outdoor & burial.
    - b. For 3-conductor requirements:
      - (1) Belden No. 8770 suitable for indoor.
      - (2) Belden No. 88770 suitable for outdoor & burial.
    - c. For 2-twisted pair requirements: Belden No. 9552 or 5202F1.
  6. UL Listed for use.
  7. Provide shielded instrumentation cable suitable for flooded burial and freeze/thaw conditions where installed in duct banks, underground conduits, or conduits in and on unheated structures.
- B. Data cables:
1. Verify unique cable requirements of individual data systems shown on Drawings with Systems Integrator.
  2. Provide Belden copper data cable systems:
    - a. DeviceNet Applications:
      - (1) No. 3083A CPE (Thick).
      - (2) No. 3085A CPE (Thin).
      - (3) No. 3082A PVC (Thick).
      - (4) No. 3084A PVC (Thin).
    - b. ControlNet Applications:
      - (1) No. 3092A RG-6 PVC Quad shield coax suitable for outdoor.
      - (2) No. 3093A RG-6 FEP Quad shield coax, plenum, suitable for outdoor & burial.
    - c. E/IP application:
      - (1) No. 7933A Cat 5e – 2 pair, bonded, shielded.
      - (2) No. 7929A Cat 5e – 4 pair, bonded, stranded, shielded.
      - (3) No. 7937A Cat 5e – 4 pair, bonded, shielded, burial.
    - d. Profibus DP Applications:
      - (1) No. 3079A 22AWG 300V Twinax.
      - (2) No. 3079E 22AWG 300V Twinax, Flex Version.
    - e. Modbus application:
      - (1) No. 8777 22 AWG, 3 pair modem drop cable.

3. Provide data cable suitable for flooded burial and freeze/thaw conditions where installed in duct banks, underground conduits, or conduits in and on unheated structures.
4. Provide data cables UL listed for intended use.

2.03 PERMANENT WIRE MARKERS

- A. Provide type-on, self-laminating vinyl, heat shrink polyolefin or nylon clip-sleeve, alpha-numeric, permanent wire markers.
  1. Use fine-line, black, permanent ink pens where field marking is necessary.
  2. Cloth tags are not acceptable.

PART 3- EXECUTION

3.01 INSTALLATION

- A. Install wiring system in accordance with manufacturer's recommendations.
- B. Install wire and cable in conduit unless otherwise shown on the Drawings.
- C. Maintain barrier or conduit separation between power conductors and instrumentation conductors to avoid magnetic interaction where such conductors enter and pass through same manhole, handhole, casing pipe, box, or enclosure.
- D. Run instrumentation conductors into control cabinets only if terminated therein. Maintain separation of power and instrumentation conductors inside cabinets.
- E. Provide individual wiring compartments or barrier for separation between intrinsically safe and non-intrinsically safe conductors inside enclosures.

3.02 WIRE AND CABLE IDENTIFICATION

- A. Install permanent wire markers on wire and cable in junction boxes, pull boxes, wireways, and wiring gutters of panels. Markers to identify wire or cable number.
- B. Provide schedule identifying various control and instrumentation circuit conductors based on equipment tag numbers.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02

PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.      **END OF SECTION**

SECTION 26 05 29

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1- GENERAL

1.01 SUMMARY

- A. Provide hangers and supports as shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- A. Related work:
  - 1. Documents affecting work under this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Division 01 - General Requirements of these Specifications.

1.02 QUALITY ASSURANCE

- A. Comply with the following requirements:
  - 1. NFPA 70 National Electrical Code (NEC).
  - 2. Local codes and ordinances.

1.03 PERFORMANCE REQUIREMENTS

- A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- C. Rated Strength: Adequate in tension, shear and pullout force to resist maximum loads calculated or imposed for this project, with a minimum structural safety factor of five times the applied force.

1.04 SUBMITTALS

- A. Product Data: For the following:
  - 1. Steel support systems.
  - 2. Stainless steel support systems.
  - 3. Nonmetallic support systems.
- B. Shop Drawings: Show fabrication and installation details and include calculations for the

following:

1. Trapeze hangers. Include product data for components.
2. Steel channel systems. Include product data for components.
3. Nonmetallic channel systems. Include product data for components.
4. Equipment supports.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 66 11 – Storage and Protection of Materials and Equipment.

1.06 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, “Structural Welding Code – Steel”.
- B. Comply with NFPA 70.

1.07 COORDINATION

- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement and formwork requirements are specified in Division 03.

PART 2- PRODUCTS

2.01 GENERAL

- A. Acceptable Manufacturers:
  1. Allied Tube and Conduit.
  2. Cooper B-Line, Inc.
  3. Erico.
  4. Thomas & Betts Corp.
  5. Uni-Strut.
- B. Provide zinc galvanized, cadmium plated steel, or malleable iron supporting devices and all related fittings, nuts, hardware, brackets and hangers.
- C. When indicated on the Drawings, provide stainless steel supporting devices and all related fittings, nuts, hardware, brackets and hangers.
- D. When indicated on the Drawings, provide factory PVC-coated metal supports, clamps, and hardware when PVC-coated, galvanized rigid steel conduit is used.

1. Comply with Section 26 05 33 – Raceways and Boxes for Electrical Systems.

E. When indicated on the Drawings, provide supports, clamps and hardware for nonmetallic conduit system.

2.02 SUPPORTING STRUCTURES

A. Provide rack supports of steel channels with adequate feet for secure mounting. Provide steel support channels with a zinc coating, hot dipped galvanized per ASTM A123 or A153.

2.03 MOUNTING, ANCHORING AND ATTACHMENT COMPONENTS

A. Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel or wood, with tension, shear and pullout capacities appropriate for supported loads and building materials where used.

a. Acceptable Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- 1) Hilti Inc.
- 2) ITW Ramset/Red Head
- 3) MKT Fastening LLC
- 4) Simpson Strong-Tie Co., Inc.

2. Mechanical Expansion Anchors: Insert wedge type steel for use in hardened portland cement concrete with tension, shear and pullout capacities appropriate for supported loads and building materials in which used.

a. Acceptable Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- 1) Cooper B-Line, Inc.
- 2) Empire Tool and Manufacturing Co., Inc.
- 3) Hilti Inc.
- 4) ITW Ramset/Red Head
- 5) MKT Fastening LLC

3. Concrete Inserts: Steel and malleable iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.

4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.

5. Through Bolts: Structural type, hex head and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All steel springhead type.
7. Hanger Rods: Threaded steel.

2.04 CONDUIT SUPPORTS

- A. Provide one-hole or two-hole conduit straps, clamps and brackets as required.

2.05 CORD GRIPS (Kellems)

- A. Acceptable Manufacturers:
  1. Kellems, a Division of Hubbell.
  2. Thomas & Betts
  3. Calbrite.
- B. Shall be stainless steel, closed mesh, of the diameter for the proposed cord diameter being supported.

PART 3- EXECUTION

3.01 INSTALLATION

- A. Install supporting devices in accordance with manufacturer's recommendations.
- B. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- C. Do not use perforated hanger iron.
- D. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC and RMC as required by NFPA 70. Minimum rod size shall be ¼ inch in diameter.
- E. Multiple Raceways or Cables: Install trapeze type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  1. Secure raceways and cables to these supports with two-bolt conduit clamps, single-bolt conduit clamps and single-bolt conduit clamps using spring friction action for retention in support channel.
- F. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design loads used for strength determination shall be weight of

supported components plus 200 lbs.

- G. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code. Contractor shall offset equipment with washers or channel system. Contractor shall not mount equipment directly to building/structural elements.
1. To wood: Fasten with lag screws or through bolts.
  2. To new concrete: Bolt to concrete inserts.
  3. To masonry: Approved toggle type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  4. To existing concrete: Expansion anchor fasteners.
  5. Instead of expansion anchors:
    - a. Powder-actuated driven threaded stud provided with lock washer and nut may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight aggregate concrete or for slabs less than 4 inches.
    - b. Threaded rod drilled into concrete and hole filled with two-part epoxy.
  6. To steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts or beam clamps (MSS Type 19, 21, 23, 25 or 27) complying with MSS SP-69.
  7. To light steel: Sheet metal screws.
  8. Items mounted on hollow walls and nonstructural building surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers and other devices on channel racks attached to substrate.
- H. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

PART 4-      MEASUREMENT AND PAYMENT

4.01      MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02      PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall



include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION

SECTION 26 05 33

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1- GENERAL

1.01 SUMMARY

- A. Provide raceway and boxes as shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related Sections:
  - 1. Documents affecting work under this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Division 01 - General Requirements of these Specifications.

1.02 QUALITY ASSURANCE

- A. Comply with the following requirements:
  - 1. NFPA 70 National Electrical Code (NEC).
  - 2. Local codes and ordinances.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 66 11 – Storage and Protection of Material and Equipment.

PART 2- PRODUCTS

2.01 GENERAL

- A. Provide conduit system of the types of conduit as indicated in the Conduit Usage Schedule in Part 3 of this Section.
- B. Provide junction boxes as necessary to facilitate pulling and/or splicing of wires.
- C. Provide factory PVC-coated boxes of same coating thickness as conduit system where PVC-coated conduit is used (except hazardous classified areas).
- D. Provide PVC boxes where non-metallic conduit system is used.

2.02 METAL CONDUIT AND FITTINGS

- A. Acceptable Manufacturers:
1. Allied Tube & Conduit
  2. Republic Conduit
  3. Western Tube & Conduit Corporation
  4. Wheatland Tube Company
- B. All underground and/or encased in concrete conduits shall be PVC coated galvanized rigid steel and no smaller than  $\frac{3}{4}$ -inch in size. All other conduits are galvanized rigid steel only and no smaller than  $\frac{3}{4}$ -inch in size.
- C. Galvanized rigid steel conduit (GRC) and fittings:
1. Conduit: Comply with ANSI C80.1 and UL 6 standards.
  2. Fittings: Comply with UL 514B and NEMA FB1 & FB2.10 standards.
- D. Polyvinyl-chloride (PVC) coated galvanized rigid steel conduit and fittings – to be used for all in-ground conduits.
1. Conduit: Comply with ANSI C80.1, UL 6, and NEMA RN1 standards.
    - a. Galvanized rigid steel conduit with full weight 40 mil thick PVC exterior coating.
    - b. PVC bonding to galvanized metal shall be stronger than plastic tensile strength.
    - c. Provide nominal 2 mil thick urethane coating to inside of conduit.
  2. Fittings:
    - a. Comply with UL 514B and NEMA RM1 standards.
    - b. Threaded with full weight 40 mil thick PVC exterior coating.
    - c. Inside coating: Nominal 2 mil thick urethane.
    - d. Provide pressure sealing sleeves on all conduit openings.
  3. Accessories: Provide straps, clamps, and screws with full weight 40 mil thick PVC exterior coating.
  4. Provide factory-installed PVC coating on all components of PVC coated conduit system.
    - a. Use coating in field only for touch-up of components.

2.03 FLEXIBLE METAL CONDUIT AND FITTINGS – allowed in control cabinets only

- A. Liquidtight, flexible metal conduit and fittings:

1. Conduit: Comply with UL 360 standards.
    - a. Galvanized flexible steel core.
    - b. Provide outer liquidtight, PVC sunlight resistant jacket.
  2. Fittings: Comply with UL 514B and NEMA FB1 standards.
- B. Flexible metal conduit and fittings:
1. Conduit: Comply with UL 1 standards.
  2. Fittings: Comply with UL 514B and NEMA FB1 standards.

2.04 NON-METALLIC CONDUIT AND FITTINGS

- A. Acceptable Manufacturers:
1. Arnco Corporation
  2. Carlon
  3. Cantex, Inc.
- B. Rigid conduit: Comply with ANSI C80.3, ASTM F512, NEMA TC-2 and UL 651 standards.
1. Use heavy wall, sunlight resistant PVC as shown on the Drawings.
  2. Rated for use with 90 degree C. conductors.
- C. Liquid tight, flexible conduit: Comply with ANSI-79 and UL 1660 standards.
1. Fittings: Liquid-tight.
- D. Fittings:
1. Comply with UL 514C and NEMA TC3 standards.
  2. Schedule 40 or 80 to match conduit.

2.05 CONDUIT BODIES

- A. Metallic conduit bodies:
1. Comply with ANSI C80.4 and C33.84, and UL 514 standards.
    - a. Use galvanized or cadmium plated malleable iron, or copper-free aluminum material.
    - b. Provide factory PVC-coated conduit bodies of same coating thickness as conduit where PVC-coated conduit is used.
- B. Non-metallic conduit bodies:

1. Comply with ASTM F512 and UL 514 and 651 standards.
  - a. Compatible with Schedule 40 or 80 conduit.
  - b. UL listed for use.
- C. Provide removable cover with gasket and corrosion-resistant screws.

2.06 DRAINS AND BREATHERS

- A. Automatic drain-breather: Use Crouse-Hinds Type ECD.
- B. Condensate drain: Use conduit outlet body, Type T.
  1. Provide threaded, galvanized plug with 3/16-inch drilled hole through plug.
- C. Provide factory PVC-coated fittings of same coating thickness as conduit where PVC-coated conduit is used.
- D. For non-metallic conduit system, use drains and breathers of material to match conduit system installed.

2.07 FLEXIBLE SEALING COMPOUND

- A. Use Panduit DS-5 duct sealing compound where air and vaportight conduit sealing is required.

1.08 HANDHOLES

- A. Provide electrical handholes as shown on the Drawings and as follows:
  1. Heavy duty, precast stackable type, constructed of polymer concrete and reinforced with heavy weave fiberglass.
  2. Stack sections to accommodate depth of conduits where shown on the Drawings.
  3. Heavy duty covers having service load of 15,000 pounds over a 10-inch square area. Tier 15 (ANSI/SCTE77) with min. H20 rating.
  4. Embossed cover logo to read "ELECTRIC"
  5. Stainless steel, hex-head cover bolts and stainless steel threaded inserts.
  6. UL Labeled with ANSI/SCTE77 Application Tier Rating.
- B. Acceptable manufacturers:
  1. Quazite Corporation, "Composolite" "PG" style (stackable).

2.09 OUTLET BOXES AND JUNCTION BOXES

- A. Surface mounted: Provide corrosion-resistant single or multiple gang malleable iron or aluminum Type FS or FD cast boxes with threaded hubs, or pressed steel boxes as permitted under Part 3 of this Section.
- B. Weatherproof boxes: Provide gasketed covers and corrosion-proof fasteners.

2.10 PULL BOXES AND SPECIAL PURPOSE OUTLET BOXES

- A. Provide pull boxes with covers held in place by corrosion-resistant machine screws, and of type or NEMA rating as shown on the Drawings.
- B. Provide special purpose outlet boxes furnished with fixtures and devices where standard outlets are not applicable.

PART 3- EXECUTION

3.01 INSTALLATION - RACEWAY

- A. Install conduit and fittings in accordance with manufacturer's recommendations.
- B. Run exposed conduits parallel to or at right angles with lines of enclosures.
- C. Keep conduit plugged, clean and dry during construction.
- D. Conduit runs extending through areas of different temperature or atmospheric conditions, or partly indoors and partly outdoors must be sealed, drained, and installed in a manner preventing drainage of condensed or entrapped moisture into cabinets, boxes, fixtures, motors, or equipment enclosures.
- E. Conduits run in concrete structures:
  - 1. Comply with applicable provisions of ACI 318 for conduits embedded in structural frame slab.
  - 2. Install conduits parallel to each other spaced on center of at least three times conduit trade diameter with minimum 2-inch concrete covering.
  - 3. Conduits over 1-½ inches may not be installed in slab without approval of Engineer.
- F. Install bushings with ground lugs and integral plastic linings at equipment with open-bottom conduit entrances.
- G. Exterior underground conduit:

1. Provide conduits or ducts terminating below grade with means to prevent entry of dirt or moisture.

H. Separation of control conductor conduits and power conductor conduits:

1. Refer to Notes on the Drawings for separation requirements.

3.02 INSTALLATION – BOXES

- A. Install boxes in accordance with manufacturer's recommendations.
- B. Use weatherproof boxes for interior and exterior locations exposed to weather or moisture.
- C. Set outlet boxes parallel to construction.
- D. Thoroughly clean boxes prior to installing wiring devices.
- E. Maintain minimum 4-inch separation between exposed power wires and control/instrumentation wires inside electrical handholes.
- F. Control conductor and power conductor separation – separate control conductors and power conductors as indicated on the Drawings.

3.03 CUTTING AND PATCHING

- A. Make provisions for openings, holes, and clearances through walls, cabinets, driveways, and partitions in advance of construction.
- B. Core drill through reinforced concrete with approval of Engineer.

3.04 EXISTING CONDUIT

- A. The Drawings show the approximate location of existing conduit as indicated by available existing records. The proposed work may require crossing, relocating, and, in some cases, connecting to the existing conduits.
- B. Expose carefully the existing conduits throughout the area of proposed work.
  1. All existing conduits to remain undisturbed and in uninterrupted use until such time as a change is approved by the Engineer.
- C. Where the conduits are to cross or be connected to existing conduit, make a field check

to determine whether any conflict will be encountered in laying the new conduit.

1. Adjust the location of new conduits, if necessary, as authorized by the Engineer, to avoid conflict with existing conduits.
- D. Any conduit found during excavation with the PVC coating damaged must be re-sealed with PVC coating.
- E. Remove and replace existing conduits, fittings, boxes, and all appurtenances as shown on the Drawings.
1. Do not remove and replace existing items shown to remain unless approved by the Engineer.

### 3.05 CONDUIT USAGE SCHEDULE

- A. Install PVC coated GRC when in contact with earth or fill unless otherwise shown on the Drawings.
- B. Install PVC coated GRC in the following locations unless otherwise shown on the Drawings:
1. Concealed in poured concrete walls and floor or roof slabs.
  2. Concealed in insulation above poured or precast concrete roof slabs.
  3. Exposed.
  4. Below grade to 1-inch above finished grade.
- C. Install liquidtight flexible metal conduit and fittings for connections to motors, instrumentation, and equipment subject to vibration and at locations shown on the Drawings.
- D. In concrete or underground: Install PVC coated galvanized rigid steel conduit, rigid aluminum conduit, and rigid non-metallic conduit only when shown on the Drawings.

### 3.06 EXPOSED OUTLET AND JUNCTION BOXES

- A. Install weatherproof outlet, switch, and junction boxes outdoors and in any area where Drawings show weatherproof (WP) wiring devices.

### 3.07 OUTLET BOX ACCESSORIES

- A. Provide outlet box accessories and mounting devices as required for each installation.

### 3.08 OUTLET BOX LOCATIONS



- A. Location of outlets and equipment is approximate. Exact location to be verified and determined by:
  - 1. Conflict with equipment of other trades.
  - 2. Equipment manufacturer's drawings.
  - 3. Engineer in field.
  
- B. Minor modification in location of outlets and equipment is considered incidental up to distance of 10 feet with no additional compensation, providing necessary instructions are given prior to roughing-in of outlet boxes and equipment.

PART 4-      MEASUREMENT AND PAYMENT

4.01      MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02      PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
  
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION

SECTION 26 60 20

ELECTRICAL SERVICE

PART 1- GENERAL

1.01 SUMMARY

- A. Provide modifications to existing electrical service as shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. This work shall be performed in accordance with Section 804 of the Standard Specifications.

1.02 QUALITY ASSURANCE

- A. Comply with the following requirements:
  - 1. NFPA 70 National Electrical Code (NEC).
  - 2. Local codes and ordinances.
  - 3. Utility Company providing service (CECHA approved).

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 66 11.

PART 2- PRODUCTS

2.01 ELECTRIC POWER SERVICE

- A. The new electric utility power service for the Summit Road PRV Station is to be rated at 100A, 120/240V, single-phase. The Contractor shall coordinate obtaining the electrical service with ComEd.
  - 1. The Contractor shall furnish and install service cables and conduit as required by the NEC and ComEd.
  - 3. The Contractor shall be responsible for coordinating all work with ComEd, Engineer and Owner's Representative.
- C. Provide and install arc flash rating stickers on the meter.

2.02 MATERIALS

- A. Comply with applicable sections of these Specifications and Utility Company

requirements for all Contractor-furnished conduit, fittings, wire, transformer pad, metering equipment, etc.

- B. Utility Meter Fitting shall be Milbank Model No. U8606-RXL-CECHA.
- C. Service cables shall be XLP Type USE.
- D. Service conduit shall be rigid galvanized steel.

PART 3-      EXECUTION

3.01      GENERAL

- A. The methods of installation of Contractor furnished equipment and materials are described in related Sections of these Specifications and as shown on the Drawings, and shall in general be in accordance with the manufacturer's and/or Commonwealth Edison's standard procedures and recognized engineering practices.
- B. The intent of these Specifications is to provide underground electrical service to the existing **Summit Road PRV Station**, as required. Electrical service/conduits/ducts shall be installed in accordance with Commonwealth Edison's requirements.

3.02      INSTALLATION

- B. The Utility Company will provide the following:
  - 1. Meter.
  - 2. Current transformers for services having current ratings higher than 100 amperes.
  - 3. Connection of electric service.
- B. Contractor to provide the following and all other related electrical work and miscellaneous materials for a complete installation:
  - 1. Utility meter fitting, Specified in Section 27 51 25.
  - 2. Secondary conductors in conduit.
  - 3. Ground rods, fittings, etc. for grounding of transformer.

3.03      CONTRACTOR RESPONSIBILITY

- A. The Contractor shall obtain Utility Company's Service Agreement for electrical service, as required.
- B. Contractor shall coordinate all work with ComEd.

3.04 CITY RESPONSIBILITY

- A. City will pay directly to Utility Company all installation and/or excess facilities charges, if any, and monthly service charges.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION

SECTION 27 51 25

CONTROL PANEL AND SCADA SYSTEM

PART 1- GENERAL

1.01 SCOPE

A. Description

1. This Section includes furnishing and installing the Control Panel and the Supervisory Control and Data Acquisition (SCADA) components, hardware, accessories together with the programming and testing as shown on the Drawings and as specified herein. All panels, instruments, piping, conduits, wiring, fittings, connectors, supports and anchors, where required shall be included under this Section of Work.
2. Modifications and additions to the City of Lockport's SCADA system necessary to add the PRV Station into the City's master SCADA system.
3. The system supplier will be responsible for development of the SCADA system computer HMI Graphics for the addition of the PRV Station.
4. Calibration, commissioning and start-up of the station SCADA system.
5. On-site training for the City's operator(s).

B. Related Work

1. Division 01 – General Requirements.
2. Division 26 Sections – Electrical and Service Specifications.
3. Section 33 14 43 - Prepackaged Steel Underground PRV Station.
4. Other Sections as specified herein.

1.02 QUALITY ASSURANCE

A. Applicable Standards, Codes and Permits

All Work performed and all materials furnished or otherwise used shall be in accordance with the National Electric Code, the National Electrical Safety Code, and applicable local regulations and ordinances. Where required by applicable codes, materials and equipment shall be listed by Underwriters' Laboratories or other testing organizations acceptable to the governing authority.

1. Instrument Society of America (ISA).
2. American National Standards Institute (ANSI).
  - a. ANSI/NFPA 70 – National Electrical Code.
3. Electrical Industries Association (EIA).
4. National Electrical Manufacturers Association (NEMA).
  - a. NEMA 250 – Enclosures for Electrical Equipment (1,000 Volts Maximum).
  - b. NEMA ICS 4 – Terminal Blocks for Industrial Control Equipment and Systems.
5. Underwriters Laboratories (UL): Applicable listings.
6. The Contractor shall, at his/her own expense, arrange for and obtain all necessary permits, inspections, and approvals by the proper authorities in local jurisdiction of such Work.

B. Supplier's Qualifications

The entire system shall be designed, coordinated, and supplied by a qualified System Integrator supplier who is regularly engaged in the business of designing and building instrument and control systems for water works and wastewater related projects. The Contractor's intended instrumentation supplier shall meet the following qualifications:

1. The System Integrator shall have and shall maintain a qualified technical staff and design office. The qualifications and experience of key project personnel shall be acceptable to the City's Representative.
2. The System Integrator shall have the physical plant and fabricating personnel to complete the Work specified. Fabrication capabilities or subcontractor fabrication arrangements shall be acceptable to the City's Representative.
3. The System Integrator shall have and shall maintain competent service personnel to service the equipment furnished. The System Integrator shall furnish 24-hour service for the complete system.
4. The System Integrator shall have successfully provided similar work for at least ten (10) years.
5. The System Integrator shall assume "Unit Responsibility" for the complete Control Panel and SCADA package. The System Integrator

shall be responsible to provide all SCADA control and appurtenances required for a fully functional system. In order to ensure compatibility and overall system function it is the intent of these Specification that all components specified herein be provided by a "single sourced" System Integrator, (i.e., supplied by a single vendor). See Paragraph 1.04 for additional requirements.

6. The System Integrator shall provide equipment compatible with the City's existing SCADA equipment.

### 1.03 COORDINATION

- A. Instrument and control systems shall be designed and coordinated for proper operation with related equipment and materials furnished by other suppliers under other Sections of these Specifications, and where applicable, to related existing equipment. All instruments and control devices shall be applied in full conformity with the drawings, specifications, engineering data, instructions, and recommendations of the instrument or device manufacturer and the related equipment manufacturer.
- B. Review of drawings submitted prior to the final determination of related equipment shall not relieve the Contractor from supplying systems in full compliance with the specific requirements of the related equipment.
- C. Related equipment and materials may include, but will not be limited to, pressure monitoring, supervisory control equipment, telemetry, conduit, cable, and piping as described/specified in other Sections of these Specifications all as associated with this Project.
- D. Installation drawings shall be prepared for interconnecting wiring and piping between the related equipment and the equipment furnished under this Section. All interconnecting wiring shall be appropriate for the service and shall result in a properly functioning system.
- E. Coordination with other sub-contractors and/or City designated contractors, and supervision of installation shall be provided by the Contractor as required during construction.

### 1.04 SUBMITTALS

- A. Comply with Section 01 33 00 – Equipment Submittals.
- B. The Contractor shall submit to the City's Representative for review detailed shop drawings, product specifications and descriptions, including control schematic diagrams, internal wiring diagrams, interconnecting wiring diagrams, sample screen displays, together with instruction manuals,

installation instructions, operating and maintenance manuals and field check-out, start-up and testing procedures.

1.05 MATERIAL DELIVERY, STORAGE AND HANDLING

Contractor shall be responsible for the delivery, storage and handling of all materials which shall include but not be limited to the following:

1. Deliver system components properly packaged in factory-fabricated containers or crates.
2. Store system components in clean, dry, heated space. Protect units from dirt, fumes, water, construction debris, and traffic.
3. Handle components carefully to prevent damage, breakage, denting, and scoring enclosure finish. Do not install damaged components. Replace and return damaged units to equipment manufacturer.

1.06 RESPONSIBILITY

Contractor shall provide a complete SCADA system compatible with the City's existing SCADA system and with the project Prepackaged Steel Underground PRV Station specified in Section 33 14 43. The PRV Station shall be an IP addressable facility that will be incorporated into the City's existing SCADA system.

PART 2- PRODUCTS

2.01 GENERAL

A. Acceptable Base Bid Control Panel and SCADA Product Providers

1. Metropolitan Pump Company, **no substitutions.**  
(815) 886-9200

B. Control Panel and SCADA Components and Coordination

1. The Control Panel shall include and house the electrical service entrance and the SCADA components for the Prepackaged Steel Underground PRV Station in a single self-contained unit. The Control Panel shall be a freestanding NEMA 3R 316 stainless steel above grade panel with minimum dimensions of 36-inches wide by 60-inches high by 18-inches deep. The Control Panel shall contain:
  - a. NEMA 1, 100-amp, 120/240-volt service entrance main



- b. service disconnect.
  - b. NEMA 1, single-phase, 3-wire, 12-circuit, 100-amp panelboard.
  - c. Telemetry Panel as Specified in Paragraph 2.02 of this Section.
  - d. Service entrance surge protective devices shall be MCQ, 160M Series, Liebert 560 Series.
  - e. Thermostatically controlled anti-condensation heater (Hoffman model DAH series).
  - f. 120-volt duplex receptacle.
  - g. Battery (Sump Boss) backup for telemetry panel sized to provide a minimum of 30 minutes of operation after loss of utility power.
  - h. Sacrificial anode test panel 12-inches wide by 12-inches high by 6-inches deep. Coordinate with Section 33 14 33.
2. The Control Panel provider shall design the panel layout to accommodate all hardware components; space requirements; power and communication interfacing; power, communication and instrumentation wiring.
3. The Control Panel Provider shall coordinate with the Prepackaged Steel Underground PRV Station provider to ensure all supervisory control and communication and alarm signals and wiring are included in the Project.
4. The Control Panel provider shall provide a new cellular modem, lightning arrester, and superflexible jumper cable as part of the SCADA hardware being provided. Cellular modem shall be a current standard modem utilized other City SCADA sites. See Paragraph 2.02 of this Section for specifications.

2.02 TELEMETRY PANEL, PROGRAMMABLE LOGIC CONTROLLER AND ACCESSORIES

- A. Telemetry Panel shall be housed in a NEMA 1 painted steel panel with dimensions of 12-inches wide by 18-inches high by 8-inches deep.
- B. The Telemetry Panel shall contain the PLC cellular modem, and all required auxiliary devices/equipment as specified herein. PLC shall be SCADAPack 314 manufactured by Schneider Electric to match the Owner's existing PLC's. Modem shall be Sierra Wireless Airlink RV50 Industrial LTE gateway. Refer to Paragraph 2.04 of this Section for all required I/O. All I/O shall be communicated to the existing master station via cellular telemetry. Provide all required equipment and programming. Modems shall be FCC and DOC

approved.

- C. Provide vandal-resistant shot glass style antenna, antenna cable, antenna support, power supplies, and all work required for a complete and functioning SCADA system. Antenna shall be permanently mounted to the exterior of the Control Panel. Antenna cable outside the Control Panel shall be enclosed in conduit or stainless-steel junction box.
- D. The Control Panel Provider shall provide all PLC programming and PLC software required to meet this Specification. The Software shall include, but not be limited to PLC logic programs to be written by the Control Panel Supplier for the PLC system to accomplish the monitoring and control functions specified herein. Control Panel Supplier shall document and annotate the programs to Owner in the form of compact discs. Two copies are required.
- E. Provide 24-volt DC power supply in this panel as required for loop power to the pressure transmitters Specified in Section 33 14 43.
- F. Interposing/Isolation relays shall be Allen0Bradley, 700-HK. General purpose relays shall be Allen-Bradley, 700-HB.

#### 2.03 EXISTING MASTER STATION

- A. Provide all work to incorporate the specified PLC logic for the PRV Station as outlined in the Specifications. The existing Master SCADA System shall be modified to incorporate the added control and monitoring for the Summit Road PRV Station to match that of the existing PRV Stations operating in the existing system.
- B. Provide all programming to modify the existing HMI graphics to meet the requirements of the Specifications. Incorporate the Summit Road PRV Station alarms and statuses into the existing HMI software such that all controlled equipment described in the Specifications shall have the capability of both manual and automatic control through the HMI software.
- C. Configure reports in the existing reporting software to include the Summit Road PRV Station reports for monthly flow totals.
- D. Configure the existing alarm dialer at the existing Master Station SCADA System such that the Summit Road PRV Station's alarms are communicated to operators via the alarm dialer.

#### 2.04 SUMMIT ROAD PRV STATION I/O

- A. Provide PRV Station I/O listed in table plus spare hot and neutral terminals wired to terminal strips. Spares shall be provided for a minimum of 10% of terminals. Spares shall be provided for all voltage sources within the panel.

Process Description	#	AI	AO	DI	DO	DH	WIRE
<b>SUMMIT RD PRV STATION</b>							
CONTROL POWER FAIL				1			2#14
UTILITY POWER FAIL				1			2#14
PRV:	PRV1						
POSITION	ZT-01	1					TSP
LOW SIDE PRESSURE	PT-01	1					TSP
HIGH SIDE PRESSURE	PT-02	1					TSP
STATION FLOOD	LS-01			1			2#14
HATCH OPEN	ZS-02						2#14
LOW TEMPERATURE	T-01				1		2#14
***TOTALS***		3	0	3	1		

**PART 3- EXECUTION**

3.01 NOT REQUIRED

3.02 **INSTALLATION AND TESTING**

A. **General**

The equipment shall be installed as shown on the Drawings and in accordance with the manufacturer's instructions and recommended best practices. All necessary fittings, connectors, supports, anchors and other items required for installation and testing shall be furnished. All items of equipment shall be operated, adjusted and tested for proper performance in accordance with the manufacturer's recommended test procedure.

B. NOT REQUIRED

C. **Start-up and Testing**

1. Start-up and testing is responsibility of the Contractor to coordinate with: PRV Station provider and electrical subcontractor.
2. Provide calibration of all equipment and signals prior to start-up and testing.
3. Notify Owner and Engineer two (2) days prior to on-site start-up.
4. In the presence of the Owner and Engineer, perform commissioning of the system after the contractor has tested the equipment and its appurtenances for proper operating condition, start-up has been performed, and Contractor indicates system is ready to be placed into operation.

D. Customer Training

The coordinating System Integrator shall provide a qualified representative at the job site to train the City's personnel in operating and maintaining the equipment. The representative shall be a skilled, factory-trained technician capable of providing services to supervise and inspect the installation and start-up operation of all systems, as well as to instruct City's operating personnel in the operation and maintenance of the equipment. The training session shall include a technical explanation of the equipment and an actual hands-on demonstration.

3.03 NOT REQUIRED

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION

SECTION 33 14 43

PREPACKAGED STEEL UNDERGROUND PRV STATION

PART 1- GENERAL REQUIREMENTS

1.01 SCOPE OF WORK

- A. The Contractor shall furnish and install one (1) - factory built, factory delivered, below ground control valve station, steel welded capsule with all necessary internal piping, valves, fittings, supports, control valves and other necessary appurtenances as shown on the plans and specified herein.
- B. The pressure reducing valve station shall be complete when delivered and will not require internal field construction except to install the power service and SCADA/Instrumentation communications conductors through the conduits provided for that purpose, connect the station inlet/outlet mains to the yard piping water mains, complete the sump pump discharge piping, complete the air inlet and air outlet piping, and other work as may be listed in the Section for CONTRACTOR'S INSTALLATION REQUIREMENTS.

1.02 CONTRACTOR'S INSTALLATION REQUIREMENTS

- A. The Contractor shall be required to provide a crane or backhoe to set the station on the field constructed foundation as shown in the plan set. The foundation shall be built by the Contractor and as designed by the PRV Station provider. Following setting of the station, the Contractor will be required to anchor the station to the foundation. The Contractor shall supply the anchor bolts.

1.03 MANUFACTURER'S RESPONSIBILITY FOR PERFORMANCE

- A. The Specifications and Drawings for the Factory-built equipment do not necessarily include all the details for the design and fabrication for the factory-built equipment. The Drawings are generally schematic but the specifications do call out strict requirements to known methods, components and assemblies that must be in a full, complete and functional station. As such, the Manufacturer shall accept and hold complete responsibility for the functionality of the pump station and its workings.

1.04 SPECIFIED MANUFACTURER

- A. The equipment specified and shown shall be manufactured and provided by Engineered Fluid, Inc. or Metropolitan Industries, Inc. of Romeoville, Illinois as

equipment standard to the Owner so as to match performance and serviceability of equipment in the Owner's system and currently in operation.

1.05 POST BID SUBMITTALS

- A. Comply with Section 01 33 00.
- B. Equipment submittals shall be bound and in a minimum of three (3) hard paper copy bound and two (2) electronic copies on CD. The submittals shall contain a minimum of two (2) full size drawings, size 24" x 36"; one (1) each covering the PRESSURE REDUCING VALVE VAULT and the electrical and instrumentation schematic. The PRESSURE REDUCING VALVE VAULT drawing shall be specific to this project, in at least three (3) different views, be to scale and illustrate the National Electrical Code (NEC) clearances per Section 110-26 of the Code. The submittal booklets will be complete with data sheets covering all major components that make up the booster pump station and the UL/ETL file number under which the manufacturer is listed, service department personnel statement as detailed in the Specifications and be complete with the manufacturer's formal warranty policy. The submittal booklets shall be complete with a full size photocopy of the manufacturer's combination UL/manufacturer logo Packaged Pumping Systems label.

1.06 QUALITY ASSURANCE

- A. The equipment furnished shall be designed, constructed, and installed in accordance with the best practices and methods and shall operate satisfactorily when installed as shown on the contract drawings and operated per manufacturer's recommendations.

1.07 SHIPPING AND DELIVERY

- A. The specified equipment shall be delivered by the manufacturer FOB DESTINATION and thereby the station manufacturer shall hold the full responsibility for the condition and completeness of the equipment upon its delivery.
- B. The Engineer shall hold the right to inspect the equipment prior to unloading and setting so as to assure the quality and condition of the equipment is in no way deficient. If in the view of the Engineer or Engineer's inspector, the equipment is deficient when delivered, delivery shall be refused.

1.08 SPECIFIED COMPONENTS

- A. Within the body of this Specification and on the Drawings, certain components are listed by name and/or model number for at least One (1) manufacturer's specific product. As such, no "OR EQUAL" is listed or allowed where at least the one manufacturer is listed.
- B. These listed components have been chosen because of the Engineer's and Owner's knowledge of and experience with these listed components.
- C. No other components other than those listed are acceptable.

1.09 FACTORY START UP AND TRAINING SERVICE

- A. Without exception, the station manufacturer is directly responsible for station start-up and operator training. Third party contractors, agents or representatives are not to be allowed to start up the station nor the equipment therein. As such;
  - 1. Start-up Factory Service Technician shall be a regular employee of the station manufacturer.
  - 2. The manufacturer shall provide two (2) copies of the complete Operation & Maintenance Manual in electronic form.

1.10 MANUFACTURER'S WARRANTY

- A. The warranty is the sole responsibility of the station manufacturer and that manufacturer's warranty shall be provided in written form, being placed in both the Submittal documents covering the specified equipment and the O&M manuals provided with that equipment.
- B. It is required the station warranty provide the Owner with a single source responsibility for all components specified herein and the system as a whole. That single source shall be none other than the station manufacturer. Third party suppliers, service contractors, "Pass-through" warranties and service by the representative are not acceptable.
- C. Said manufacturer's warranty shall at a minimum cover:
  - 1. A period of one (1) year commencing upon successful start-up, after authorized manufacturer's start-up, not to exceed eighteen (18) months from the date of shipment.
  - 2. The warranty period shall be inviolate regardless of any component manufacturer's warranty for equipment and components within the station.
  - 3. The manufacturer's warranty shall cover all equipment, components and systems provided in or with the station by the manufacturer of the

station, exclusive of those components supplied by and/or installed by others independent of the manufacturer of record for this station.

4. The warranty shall provide for the station manufacturer to bear the full cost of labor and materials for replacement and/or repair of faulty or defective components so there shall be no cost incurred by the Owner for this work during the warranty period.
5. The manufacturer's warranty policy is amended only by the items considered consumable, i.e., light bulbs, lubricants and other maintenance items consumed by usage.
6. No assumption of contingent liabilities for any component failure during manufacturer's warranty is made.
7. The warranty pertains only where the equipment has been operated in strict accordance with the manufacturer's instructions and requirements. Evidence of misuse or modification to the equipment voids the warranty.

- D. If the submitted written manufacturer's warranty does not meet the minimum requirements set forth above, that submittal will forthrightly be rejected.

## PART 2- PRODUCTS AND COMPONENTS

### 2.01 EQUIPMENT CAPSULE DESIGN STANDARDS

- A. The equipment capsule shown shall be suitable by construction and materials for direct burial with water-tight integrity. The size shown for the capsule shall be appropriate for National Standard mandated clearances and for proper clearances above, below and around equipment to provide for safe servicing, removal and reinstallation of that equipment.
- B. The entrance manway in the locations shown shall be sized to provide eventual removal and replacement of any component within the station without altering the station to accomplish that task.
- C. The drawings for this equipment shall illustrate equipment centerline and clearance/maintenance dimensions about the major equipment items. These dimensions are minimums.

### 2.02 EQUIPMENT CAPSULE - CONSTRUCTION

- A. The plate steel employed throughout the capsules shall be 1/4" (1/4" for the side sheets and 3/8" for the top and bottom sheets) as minimum thickness(es) and meet or exceed the requirements for ASTM A-36. The structural shapes, channels and angles used shall be of the thickness/weight as shown on the plans (submittals) for this item and shall meet or exceed the requirements for ASTM A-36.



2.03 CAPSULE DIMENSIONS

- A. The capsule shall be a rolled, vertical cylinder steel capsule of sealed welded construction with top and bottom and side sheets and with appropriate supporting structure. The capsule shall be sized as shown on the drawings.

2.04 CAPSULE REINFORCEMENT

- A. The top, bottom and sides of the equipment capsules shall be supported and reinforced by a combination of standard structural shapes of the sizes and weights as shown on the Manufacturer's submittal documents. The structural rectangular or square tubing shall be of the wall gauge as shown on the submittal documents and shall meet or exceed the requirements for ASTM A-500 Grade. The capsules noted on the drawing shall be designed and constructed to withstand soil and water table loadings, and H-20 Traffic Wheel Loading.
- B. The capsule designs including the design of the concrete base slab for the PRESSURE REDUCING VALVE VAULT shall be prepared and stamped by a Registered Structural Engineer licensed in the State of Illinois.

2.05 PLATE/SHEET CAPSULE JOINTS – LAP SEAM WELD

- A. The construction of the capsule as a buried system requires construction techniques necessary to ensure a long service life. The side sheet – top sheet joint construction is specified to provide maximum coating effectiveness and minimal corrosion potential by the elimination of sharp edges or abrupt transitions where coating process cannot maintain full film thickness and so promote corrosion and undercutting.
- B. The plate forming the top and bottom of the capsules shall be rolled edge, cold formed prior to assembly so as to form a lap joint with the side wall. The lap joint shall be continuously full fillet welded on the capsule interior by hand and the exterior by machine to form an airtight seal. The lower side wall continuous weld shall be an average 1-1/2 inches above the capsule floor. Capsules without lap joints will not be accepted.
- C. The lap joint shall be in full conformance with Steel Tank Institute (STI) P-3 specifications Section 4.2.6 and Underwriters Laboratories (UL) 58 Construction Section 6, Figure 6.1 Head Joint #23 specifications for steel vessels in buried service.

2.06 CAPSULE PRESSURE TEST

- A. Each capsule shall be constructed complete as a closed vessel with fittings as required for testing the air-tight integrity of the capsule. The capsule shall be tested according to UL-142, Performance Test Methods, 39, Tank Leakage Test, 39.2, Primary Containment Tanks. The testing of each tank shall be witnessed and certified by a Registered Professional Engineer with a report provided to the Engineer of Record prior to the shipment of each finished capsule.

2.07 TANK SHEET PENETRATION WELDS

- A. Any ferrous metal device, namely water transmission piping and conduits passing through the capsule wall shall be welded fully long its circumference or length, being welded on both sides of the capsule wall using a metal-added, MIG shielded arc welding process.

2.08 LIFTING PLATES AND EQUIPMENT LIFTING EYES

- A. Four (4) lifting plates of 3/8 inch minimum thickness shall be placed about the perimeter of each capsule to facilitate the lifting and handling of the station. Interior lifting eyes shall be placed over each piece of equipment in excess of 60 pounds in weight.

2.09 FLOOR SUMP

- A. The capsules will be complete with a sump. The sump shall be a minimum of eighteen (18) inches in diameter by twelve (12) inches deep; the sump shall be provided with sump pump, discharge piping with isolation valve and check valve to discharge as indicated on the Drawings. Sump Pump piping shall include unions to allow easy pump removal and or replacement.

2.10 HATCHWAY EXTENSION

- A. There shall be provided below the manway cover, a fabricated steel extension extending from the top of the capsule structure to below and supporting the hatch assembly. The extension shall be of height to meet the dimensions for pipe depth and grade.
- B. The hatch shall be bolted to a hatch extension of the capsule. Bolted connection shall stay above the surface of the finished grade to allow changing out the hatch. Non-shrink closed cell foam gasket shall be used to make positive seal between the top of the hatch extension and the bottom flange on the hatch.

2.11 ENTRANCE MAN-WAYS - RAISED MOUNTED SCUTTLES

- A. The entrance man-ways shall be Bilco Model MNB 50 roof scuttle, with a minimum clear inside opening of thirty (30) inches by fifty-four (54") inches or Bilco Model MS 50 roof scuttle, with a minimum clear inside opening of thirty (30) inches by thirty-six (36) inches.
- B. The scuttle covers shall be made of 11 gauge aluminum on the exterior. The scuttle covers shall be insulated with a minimum of one (1) inch of fiberglass insulation, covered and protected by an 18 gauge aluminum liner.
- C. The entry locks shall be flush mounted, in the scuttle riser in position to be protected from the elements by the cover skirt as detailed on Bilco Drawing 6184. The locks will be of the pin tumbler type, dead bolt, with an inside safety release. Two (2) keys will be provided for each station, on a key ring complete with the manufacturer's identification. No locking devices or other penetrations of the cover shall be allowed.
- D. The hatch shall be bolted to a hatch extension of the capsule.
- E. Bolted connection shall allow for changing out the hatch. Non-shrink closed cell foam gasket shall be used to make positive seal between the top of the hatch extension and the bottom flange on the hatch.
- F. The hatch shall be provided with a "hatch open" roller type detection switch which shall provide a SCADA communications signal in conformance with the electrical and SDADA Specifications.

2.12 ACCESS LADDER

- A. An all aluminum access ladder will be provided for each station. The ladders shall be a Type 1A with 300 lbs. load rating and meet ANSI A14.3 fixed ladder standard. The ladders will have serrated rungs with 3" full I-Beam side rails. The uppermost ends of the side rails will be protected by plastic caps bolted into place. The complete access ladder will be bolted into place at a minimum of two (2) points both top and bottom so as to be easily removable to facilitate equipment maintenance.

2.13 LADDER ASSIST DEVICE

- A. A Bilco Model LU-1 ladder up safety post shall be installed on the vertical centerline of each ladder.

2.14 CAPSULE CATHODIC PROTECTION

- A. The station manufacturer shall furnish for the Contractor's proper installation (6) seventeen pound packaged magnesium anodes for cathodic protection. The anodes shall be H-1 alloy cast to meet ASTM B-80, alloy AZ-63. The anode lead wires shall be silver soldered and potted to be waterproof. The anodes shall be buried equally spaced around the station and connected by heavy copper wire to lugs on the station provided for that purpose.

#### 2.15 ANODE TEST STATION

- A. An anode test station shall be furnished consisting of individual pushbutton switches for each of the magnesium anode installed around the perimeter of the steel capsule. The Test Station pushbutton switches will allow current to flow between the respective anode and the steel capsule passing through a Test Station Milliammeter, mounted on the Test Station door, so, that when the pushbutton is held in the depressed position, the operator can observe needle deflection or lack thereof. The milliammeter shall have a range of 0 30 mA. Wire leads each anode shall enter the capsule through one or several watertight, compression fittings in the capsule wall or in the hatch extension wall. The separate leads shall be run in conduit to the Test Station mounted on the capsule wall as shown.
- B. A station capsule cathodic system lug shall be provided as required to complete the system circuit to the anodes.
- C. Anode test station is to be provided by the PRV Station Provider and installed in the above grade Control Panel SCADA Panel. PRV Station provider shall coordinate with the Control Panel Provider for the installation of the anode test station.

#### 2.16 CAPSULE INSULATION

- A. The equipment capsule sidewall , the top and the access hatch extension shall be insulated with a isocyanurate foam insulating material. The insulation shall be applied to the exterior of the vault by spray and other approved methods. The insulation shall have a minimum density of 1.7 - 1.8 lbs/cu. ft. nominal and shall be applied to the thickness required to provide a minimum R value of 21. The insulation shall have a ASTM E-84 flame spread rating of less than 30. The insulation shall be inspected prior to backfilling and be repaired, if necessary.

#### 2.17 PIPING-TRANSMISSION

- A. Piping shall be steel and conform to material specification ASTM A-53(CW) for nominal pipe size four (4) inch and smaller and ASTM A-53(ERW) Grade B for

nominal pipe size five (5) inches and larger. Steel butt-welding fittings shall conform to material specification ASTM A-234 Grade WPB and to the dimensions and tolerances of ANSI Standards B16.9 and B16.28 respectively. Forged steel flanges shall conform to material specification ASTM A-105 Class 60 and/or ASTM A-181 for carbon steel forgings and to the dimensions and tolerances of ANSI Standards B16.5 as amended in 1992 for Class 150 and Class 300 flanges. The piping sizes shall be as shown on the drawing.

Size 10 inch and below	Schedule 40
Size 12 inch thru 20 inch	Standard weight (.375" wall)
Size 24 inch and above	Standard weight (.500" wall)

## 2.18 PIPE WELDING

- A. All pipe welds shall be performed by certified welders employed by the pump station manufacturer. As part of the equipment submittal, the pump station manufacturer shall provide copies of the welding certificates of the employees who are to perform the pipe welds. Shop welders shall be certified in accordance with ASME BPVC Section IX or AWS D1.1. Certification shall be done by an independent testing laboratory giving certification for the weld positions for which the tests were performed.

## 2.19 PIPE SURFACE PREPARATION

- A. All piping inside and outside surfaces shall be prepared by grit blasting, or other abrasive blasting, prior to any welds taking place to minimum SP-6 finish.

## 2.20 SADDLE CUTS AND WELDS

- A. Saddle cuts in pipe made in preparation for a saddle weld of a pipe at an angle to a pipe shall be made with numerically controlled, plasma cutting machines. Similarly, saddle end cuts to pipes to make a saddle mating piece shall be done with the same numerically controlled plasma cutting equipment.
- B. When the two saddle cut pieces are mated and welded with the MIG process, the internal finished weld shall be smooth and free of inclusions, crevices and other corrosion sites.

## 2.21 WELD STANDOFFS

- A. No welding shall be performed on fusion bonded coated piping after the coating process has been performed. Where any piping is to be welded after the application of fusion bonded epoxy coating to the inside of the pipe, at the point of the weld, a weld standoff must be welded to the pipe prior to the coating. The weld shall be made to the standoff and not onto the pipe.

2.22 TANK/WALL PENETRATION COATING PROTECTION SLEEVE

- A. Where a fusion bonded epoxy interior coated pipe passes through the steel tank shell or a steel wall section, prior to fusion bonded coating of that pipe, a pipe sleeve shall be welded over the pipe in the area where the pipe passes through the steel sheet. The sleeve shall be one-half (1/2") inch thickness and fit closely over the transmission pipe. The sleeve shall be seal welded to the transmission pipe at each end with a full and continuous fillet weld.
- B. Following the welding of the sleeve to the transmission piping, the sleeve welds and the sleeve shall be grit blasted to an SP-6 finish so the pipe is prepared for fusion bonded epoxy coating by the process specified elsewhere in these documents.

2.23 PIPE SUPPORTS

- A. Pipe supports by minimum sizing for:
- 8" and smaller piping shall be 2" x 3" x 3/16" wall rectangular tubing;
  - 10" and larger piping shall be 3" x 4" x 1/4" wall rectangular tubing;
  - 6" and larger piping shall be provided with "kick" bracing projecting fully from the underside of the pipe to the floor at an angle of no less than 15° from vertical out at a right angle to the run of the pipe being supported. These "kick" braces shall be in addition to the vertical pipe supports called out above. Pipe supports are to be fully welded at both end points to the pipe and steel floor where required. Where components are to be supported and may require disassembly at some time, the supports for these components shall be welded at the bottom and bolted at the top by use of a bolt yoke welded to the top of the support and bolted into the flange connection picking up at least three bolts.

2.24 FUSION BONDED EPOXY INTERNAL PIPE COATING

- A. The internal surfaces of piping to be fusion bonded coated shall be grit blasted to an SP-10 finish with the finish profile required by the coating material manufacturer. The internal, wetted surfaces of the steel transmission piping shall have applied to it a Fusion Bonded Epoxy Coating on the interior pipe surface. The coating shall be applied and meet the testing requirements of Table 1 and Table 2 with the exception of Table 2 section 7 per AWWA C-213.
- B. The powder coating product shall be National Sanitation Foundation (NSF) Standard 61 certified material.

- C. Prior to shipment of the station, the station manufacturer shall provide in writing to the Engineer certification that the fusion bonded epoxy coating has been applied to all internal surfaces of the steel piping using the proper method. Said certification shall show under the station manufacturer's letterhead:
- Date of application;
  - Material manufacturer and product designation including a product data sheet for the coating;
  - Applier of the fusion bonded coating, name, address and phone number;
  - Notarized signature of an officer of the station manufacturing company stating the fusion bonded epoxy coating was applied to AWWA Standard C213-91 or the latest revision.

2.25 COATINGS - CORROSION PROTECTION

- A. All interior and exterior surfaces of the exposed steel structure, transmission piping, and fittings shall be gritblasted equal to commercial blast cleaning (SSPC SP6). Following fabrication all exposed surfaces of the station, interior and exterior, shall be coated according to the following requirements.

2.26 WELDMENT PRIME COATING

- A. All weldments will be pretreated by hand to provide additional corrosion protection using the same product as the base coat. Following the pretreatment full coating application shall take place.

2.27 BASE COATING

- A. The base coating shall take place immediately after surface preparation. The protective coating shall consist of a two-component, high solids, high build, fast drying epoxy system for protection and finishing of steel and having excellent corrosion resistant properties. The epoxy system shall be self-priming. The base coating shall be Tnemec Series 66HS Epoxoline (white) 4.0 mils dry film thickness

2.28 TOP COATING

- A. Following the base coating application, a full finish coating application shall take place. The protective coating shall consist of a two-component, high solids, high build, fast drying epoxy system for protection and finishing of steel and having excellent corrosion resistant properties. The epoxy system shall be self-priming. The intermediate coating shall be one coat of Tnemec Series 66HS (white) 5.0 mils. The final coating shall be one coat of Tnemec Series

66HS (white) 5.0 mils. The complete base and finish coats shall provide a total dry mil thickness of 14.0 mils.

2.29 POST-ASSEMBLY COATING

- A. Following assembly and just prior to shipping, there shall take place a thorough cleaning of the floor of the station followed by a rolled on coating of the two part epoxy coating to cover over any scuffing or scaring that might have occurred during assembly.

2.30 FLOOR COATING AND CORROSION PROTECTION SYSTEM

- A. The exposed surfaces of the structural steel base shall have a non-skid coating of a two-component, 100% high performance aromatic polyurea spray elastomer system with zero VOC (Volatile Organic Compounds), 100% solid. The coating shall offer outstanding performance and superior elastomeric protection for various substrates. The coating shall be designed as a user-friendly product for moisture insensitive applications because of its pure polyurea chemistry, and offer exceptional adhesion properties for properly prepared substrates. The high performance formulation shall produce an excellent skin formation for chemical resistance and moisture protection. The coating shall be dark gray in color.

- B. Both the Iso "A" Side and Resin "B" Side shall be preconditioned between 70-90°F before application. Iso "A" and Polyol "B" components must be pumped by low-pressure transfer pumps to a suitable high-pressure proportional pumping system.

- C. Temperature Settings:

Iso "A" Block Heater:	140-160°F
Resin "B" Block Heater:	140-160°F
Hoses (Iso and Polyol)	140-150°F

- D. Hydraulic Pressure Setting:

Equipment Hydraulic Pressure: 2,000-2,500PSI

2.31 CHEMICAL TECHNICAL DATA

- |    |                        |           |               |
|----|------------------------|-----------|---------------|
| A. | Mix Ratio by Volume:   | Gel Time: | 1A:1B 6-9 Sec |
| B. | Tack Free Time:        |           | 9-12 Sec      |
| C. | Viscosity (cps) @ 77°F |           |               |
| D. | "A" Iso Side:          |           | 1,000±100     |
| E. | "B" Resin Side:        |           | 370±50        |



F. Material Density (lbs/gal) @ 77°F

1. "A" Iso Side: 9.5 lbs/gal
2. "B" Resin Side: 8.4 lbs/gal.

2.32 BASIC PHYSICAL PROPERTIES

A. All tests are performed by OCM Test Laboratories.

- ISO 17025 Certified
- American Association for Laboratory Accreditation (A2LA)

<u>Test Name</u>	<u>Test Methods</u>	<u>Value</u>
Hardness Shore D	ASTM D2240	60±1
Coefficient of Friction	ASTM D1894	
Static		0.305
Kinetic		0.127
Dielectric Const.	ASTM D150	3.6
Dissipation Factor	ASTM D150	0.031
Volume Resistance	ASTM D257	2.3x10 <sup>14</sup> ohm cm
Elongation	ASTM D412	162%
Flexural Strength	ASTM D790	2,630 PSI
Flexural Modulus	ASTM D790	0.056 MSI
Fungus Test	MIL-STD 810F	Pass
Pull-off Test–Adhesion	ASTM C297	
To Metal – No Primer		1,800 PSI
To Metal – XPM Primer		1,910 PSI
To Metal – LXSF515 Primer		1,870 PSI
Taber Abrasion	ASTM D4060	0.06980 (gm Loss/1000 cycles)
Tear Strength	ASTM D624	783 ppi
Tensile Strength	ASTM D412	3,432 PSI
Water Vapor Trans.	ASTM E96	0.499 Grains/Hr Sq.Ft.

B. The chemical resistance testing for the coating shall be per ASTM D543 for immersion in fluids methods. Additional product certifications shall include USFDA Coatings for Incidental Food Contact Applications Certified by Keller and Heckman LLP and MIL-STD-810F.

2.33 SERVICE CONNECTIONS ON INTERNAL PIPING

A. All plumbed devices within the station eventually requiring service, such as meters, control valves, pumps and like equipment, shall be easily removed from the piping by the presence of appropriately placed and sufficient quantity of

adaptors and couplings as shown on the drawings; no less than the quantity of couplings and adaptors shown shall be allowed. Corporations in potable water lines shall be Mueller H 15008. Interior hose bibbs shall be Watts 8A, Nidel Model 34H.

2.34 RESTRAINING POINTS

- A. The main inlet and outlet piping to the station shall each be provided with two (2)/four (4) restraining points as welded on "eyes" or similar device welded to the (underside of the base structure framing)(the exterior piping)(the capsule wall adjacent to the pipe penetration) as shown to facilitate the attachment of joint restraint tie rods or other device to be used in retarding any pipe movement at the connections.

2.35 COMPRESSION COUPLINGS

- A. The station piping shall include a variety of compression type, flexible coupling to prevent binding and facilitate removal of associated equipment. These couplings are to be where shown on the plans. Couplings shall be equal to Dresser, Smith Blair.
- B. Grooved fittings may not be used under any circumstance.
- C. All compression couplings or flanged coupling adapters (FCA), and flexible connectors/expansion joints shall include a minimum of two (2) zinc coated steel threaded rods across the joint with appropriate bolted restraining points.

2.36 LINE PRESSURE GAUGES

- A. Combination pressure gauges shall have a built-in pressure snubber and have 4 1/2" minimum diameter faces and turret style case, black fiberglass-reinforced thermoplastic with a clear acrylic window with Buna-N gasket. The movement shall be rotary; the bourdon tube shall be copper alloy C-type. The gauge shall have a 1/4" MNPT lower mount process connection and contain a 0.6mm copper alloy restrictor. Combination pressure gauge range and scale graduations shall be in psi and feet of water as follows:
  - 1. Gauge ranges shall be appropriate for each of the inlet and outlet gauges for each pressure reducing valve and shall be within the normal pressure operating range of the station plus an allowable surge pressure of 1.5 times normal operating pressure. All gauges will be panel mounted off the pipeline and be connected to their respective sensing point. The gauge trim tubing shall be complete with both isolating and vent valves and the tubing shall be so arranged as to easily

vent air and facilitate gauge removal. Gauges mounted directly to the pipeline or at the sensing point will not be accepted.

2. Gauge ranges, markings and gauge location shall be identified in the submittal documents.

2.37 STATIC AND SENSING LINES

- A. All gauge, switch and transmitter sensing lines shall be minimum 1/4" OD white polypropylene tubing run from the sensing point and a ball valve to the point of device mounting.
- B. The pilot tubing shall be run in a workmanlike manner with elastomeric/stainless steel mounting straps to securely hold the tubing to be free of stress and vibration. The alignment and organization of the sensing lines shall be continuously rising.

2.38 SAMPLE TAP

- A. A single, right angle outlet, smooth nose, chrome plated sample tap shall be affixed to the manual vent ball valve.

2.39 HOSE BIBB WITH VACUUM BREAKER

- A. There shall be provided a standard hose bibb with valve and vacuum breaker on the suction piping. The hose bibb connection shall be through a pressure regulator if the header pressure would exceed 60 psi. All components shall be of low lead/no lead construction meeting all regulatory guidelines. Interior hose bibbs shall be Watts 8A, Nidel Model 34H.

2.40 BALL VALVES

- A. The ball valves will be 2-piece, full-port design with blow-out proof stem. The seats, packing and seal shall be PTFE. Ball valves shall be provided with an adjustable stem packing nut. The body and retainer shall be lead free brass (DZR). The ball shall be lead free stainless steel for sizes 1/4"-1" and 316SS for sizes 1-1/4"-4". The handle shall have a distinctive white "lead free" handle grip and blue "lead free" hanging tag. The valves will be NPTxNPT threaded pattern. Maximum working pressure shall be 600 psi up to 2" and 400 PSI for sizes 2-1/2" to 4".

2.41 BUTTERFLY VALVES

- A. The butterfly valves shall be provided in accordance with AWWA Standard AWWA C504, latest revision, as (Class 150B, 150 psi working pressure).

- B. Valves shall be by Pratt or Val-Matic.

2.42 MANUAL VALVE ACTUATORS

- A. Manually operated butterfly valves size 6” and smaller shall be equipped with lever style operators capable of withstanding 450 ft. lbs. of input torque and mounted to the valve trunnion with 4 bolts.
- B. Manually operated butterfly valves size 8” and larger shall be equipped with travelling nut style handwheel operators capable of withstanding 450 ft. lbs. of input torque and mounted to the valve trunnion with 4 bolts.

2.43 HYDRAULIC ACTUATED CONTROL VALVES

- A. The valve configuration as shown shall be hydraulically operated, single diaphragm actuated. The valve shall consist of three major components: the body with seat installed, the cover with bearing installed, and the diaphragm assembly. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the main valve or pilot controls. Valve body and cover shall be epoxy coated. The stainless steel seat with integral bearing shall be of the solid, one piece design.
- B. The diaphragm assembly shall contain a non-magnetic stainless steel stem of sufficient diameter to withstand high hydraulic pressures. The stem shall be fully guided through its complete stroke by a removable bearing in the valve cover and an integral bearing in the valve seat. No center guides shall be permitted. The stem shall be drilled and tapped in the cover end to receive and affix such accessories as may be deemed necessary.
- C. The flexible, non-wicking, FDA approved diaphragm shall consist of nylon fabric bonded with synthetic rubber compatible with the operating fluid. The diaphragm shall be fully supported in the valve body and cover by machined surfaces which support no less than one-half of the total surface area of the diaphragm in either the fully open or fully closed position. The pilot control system shall include CK2 isolation valves and X46 flow clean strainer
- D. The pilot system shall include an opening and closing speed control on all valves.
- E. Pilot controlled sensing shall be upstream of the pilot system strainer so accurate control may be maintained if the strainer is partially blocked.

- F. The pressure reducing pilot control shall be a direct-acting, adjustable, spring-loaded, normally open, diaphragm valve designed to permit flow when controlled pressure is less than the spring setting. The pilot control is held open by the force of the compression on the spring above the diaphragm, and it closes when the delivery pressure acting on the underside of the diaphragm exceeds the spring setting. The pilot control system shall include a fixed orifice.
- G. The valve shall be equipped with a brass valve stem rod rising through a compression bushing in the top of the valve.
- H. A valve position indicator shall be installed on the main valve cover and shall consist of a brass indicator rod fastened to the main valve stem which moves up and down inside a clear glass tube contained in a bar brass housing open on two sides to permit clear vision of the brass indicator rod.
- I. All Control Valve construction and components shall comply with low lead/ no lead regulatory requirements.
- J. Normal working pressure is:
  - a. for the valve inlet Hydraulic Grade Line 820.49 approximately 73.1 psi at ground level,
  - b. for the valve outlet Hydraulic Grade Line 776.87 approximately 54.2 psi at ground level.
- K. The Control Valve shall be a Cla-Val Model 92-07 Pressure Reducing/Pressure Sustaining Valve with X117C Position Transmitter.

2.44 PRESSURE TESTING

- A. When the station plumbing is completed, the pressure piping within the station (including valves, pumps, control valves, and fittings), connections as make up the entire system shall be hydrostatically tested at a pressure of 150 psi or a pressure equal to the lowest test pressure rating of the equipment within the tested system, whichever is lesser pressure. The test pressure shall be applied for a minimum of 20 minutes, during which time all joints, connections and seams shall be checked for leaking. Any deficiencies found shall be repaired and the system shall be retested.
- B. The results of this testing shall be transmitted in writing to the Engineer prior to shipment of the station and shall note test pressure, time at full pressure and be signed by the Quality Control Manager or test technician.

2.45 GAUGE PRESSURE TRANSMITTERS

- A. Pressure transmitters shall be supplied to measure inlet and outlet pressure. The transmitters shall sense gauge pressure and transmit a 4-20 mA dc signal. The instruments shall measure pressure of a predetermined span. Range is to be fully adjustable throughout using allowable span and range limits. The accuracy shall be  $\pm 0.20\%$  of span.
- B. Each transmitter shall provide an analog output and include a standard LCD with pushbuttons to provide Intelligent transmitter configuration directly from the on-board pushbuttons. The two-line digital indicator shall display the measurement in any selected units. The pushbuttons shall provide calibration of zero and span, setting of linear output, forward or reverse direction, external zero enable or disable, damping, failsafe action and local display including upper and lower range value selection.
- C. All process-wetted parts of each instrument shall be Type 316L stainless steel. The transmitter shall be protected by a gasketed, weatherproof NEMA 4X enclosure. The transmitter shall be approved for use in hazardous locations intrinsically safe Class 1 Division 1 locations.
- D. The transmitter shall have 1/2 inch NPT female threaded tapping ports.
- E. Gauge Pressure Transmitter manufacturer:
  - 1. Foxboro Series IGP20
- F. Wiring to/from devices and equipment within the equipment chamber shall be completely factory installed to junction boxes mounted within the station. Wiring shall be type THHN, 12 AWG minimum.
- G. All wiring within the equipment chamber and outside the junction boxes shall be run in rigid PVC conduit.

2.46 HVAC

- A. Provide Exhaust Air Fan complying with regulatory requirements and cable of providing a minimum of 6 air changes per hour with a minimum requirement of 100 scfm. Fan to have HOA switch. In Auto position fan shall be activated any time access hatch door is open. In hand position, fan shall run regardless of access door position. In off position fan shall be off. Provide rodent and insect screens for air system. Exhaust duct shall be Schedule 40 steel with 180-degree elbow downturned to prevent rain entry. Provide rodent and insect screens for air system. Exhaust and free air ducts shall be spaced a minimum of 10-feet apart horizontally. Inlets and outlets shall be a minimum of 24-inches above grade.

- B. Provide Free Air Intake with damper control. Damper shall be opened when exhaust fan runs and closed when exhaust fan is off. Provide rodent and insect screens for air system. Exhaust duct shall be Schedule 40 steel with 180-degree elbow downturned to prevent rain entry. Exhaust and free air ducts shall be spaced a minimum of 10-feet apart horizontally. Inlets and outlets shall be a minimum of 24-inches above grade.
- C. Provide 4,800-watt Electric Unit Heater with integral control thermostat. Electric unit heater shall be 240 volt single phase and shall not exceed operating loads protected by a 2-pole 25 amp circuit breaker.
- D. Dehumidifier shall be 120-volt single phase receptacle plug type rated for 24-pints per day at 80°F and 60% relative humidity. Dehumidifier shall have integral humidistat for controlling on-off of the unit. Non-GFI outlet.
- E. Provide UL approved cry chemical-type pipe extinguisher for Class A, B, and C fires; 10-pound capacity.
- F. Floor mats shall be Line-X of Huntsville Alabama.

2.47 SUMP PUMP

- A. 1,000 gph at 15 ft TDH. 120-volt single phase. Float activated. Non-GFI outlet.

2.48 CONTROL VALVE BY-PASS

- A. Provide 3-inch by-pass with 3-inch isolation butterfly valves.

2.49 DOOR SWITCH OPEN DETECTION

- A. Provide door open detection system and wiring consisting of access hatch door activated switch and authorized personnel keypad matching the City standard system.

2.50 COORDINATION WITH POWER/SCADA PANEL

- A. Coordinate power and instrumentation interface and conductors with above grade Power/SCADA Panel specified in Section 27 51 25.

2.51 INTERIOR LIGHTING AND RECEPTACLE

- A. Interior lighting shall be two (2) Vaportite LED, 57.3-watt, Metalux LED fixtures with manual light switch near top of entrance tube.
- B. In addition to the non-GFI 20-amp receptacles for dehumidifier and sump pump, provide one 20-amp GFI general purpose receptacle. Receptacles shall

be grounded and Cooper 5362, Leviton 5362, or Pass and Seymour 5362.

2.52 VAULT FLOODING DETECTION FLOAT SWITCH

- A. Provide a float switch to indicate station flooding at the telemetry panel. Float switch shall be App 4 Water Model 101FX.

2.53 LOW TEMPERATURE THERMOSTAT

- A. Provide a line voltage low temperature thermostat to indicated station low temperature at the telemetry panel. Thermostat shall be Honeywell T6061A.

2.54 LABELING

- A. Provide painted stencil labeling for all capsule penetrations and the following interior components:
1. Low Pressure with flow arrow.
  2. High pressure with flow arrow.
  3. Pressure reducing and pack pressure sustaining valve.
  4. Nameplates for each pressure transmitter, float switch, thermostat, and valve position transmitter.

PART 4- MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

Measurement will not be made for the Work specified in this Section.

4.02 PAYMENT

- A. Payment for the Work specified in this Section shall be included in the contract Special Provision price for PRESSURE REDUCING VALVE VAULT.
- B. The contract Special Provision price for PRESSURE REDUCING VALVE VAULT shall include full compensation for furnishing all materials; for all preparation/installation and placing of the materials; and for all labor, equipment, tools and incidentals necessary to complete the Work specified in this Section.

END OF SECTION



FAP 351 (IL ROUTE 7)  
CITY OF LOCKPORT  
SECTION NO. 18-00084-00-WR  
WILL COUNTY  
CONTRACT 61H98

**FRICTION AGGREGATE (D-1)**

Effective: January 1, 2011

Revised: December 1, 2021

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

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

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

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

Use	Mixture	Aggregates Allowed	
HMA High ESAL Low ESAL	C Surface and Binder IL-9.5 IL-9.5FG or IL-9.5L	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Carbonate Crushed Stone <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>4/</sup> Crushed Concrete <sup>3/</sup>	
HMA High ESAL	D Surface and Binder IL-9.5 or IL-9.5FG	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Carbonate Crushed Stone (other than Limestone) <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>4/</sup>	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		25% Limestone	Dolomite
		50% Limestone	Any Mixture D aggregate other than Dolomite
75% Limestone	Crushed Slag (ACBF) or Crushed Sandstone		
HMA High ESAL	E Surface IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> <sup>5/ 6/</sup> : Crushed Gravel Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag  No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>

Use	Mixture	Aggregates Allowed	
		50% Dolomite <sup>2/</sup>	Any Mixture E aggregate
		75% Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone
		75% Crushed Gravel <sup>2/</sup>	Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag
HMA High ESAL	F Surface IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> <sup>5/ 6/</sup> :	
		Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Crushed Gravel <sup>2/</sup> or Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone

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

**HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D-1)**

Effective: November 1, 2019

Revised: December 1, 2021

Revise Article 1004.03(c) to read:

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

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

1/ CA 16 or CA 13 may be blended with the CA 11.

2/ The coarse aggregates used shall be capable of being combined with the fine aggregates and mineral filler to meet the approved mix design and the mix requirements noted herein.

3/ The specified coarse aggregate gradations may be blended.

4/ CA 13 shall be 100 percent passing the 1/2 in. (12.5mm) sieve.”

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

“(e) Absorption. For SMA the coarse aggregate shall also have water absorption ≤ 2.0 percent.”

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

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

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

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

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

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

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

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

- 1/ Based on percent of total aggregate weight.
- 2/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign = 90.
- 3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.
- 4/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.

- 5/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.
- 6/ When the mixture is used as a binder, the maximum shall be increased by 0.5 percent passing.”

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

(b) Volumetric Requirements. The target value for the air voids of the HMA shall be 4.0 percent, for IL-4.75 and SMA mixtures it shall be 3.5 percent and for Stabilized Subbase it shall be 3.0 percent at the design number of gyrations. The voids in the mineral aggregate (VMA) and voids filled with asphalt binder (VFA) of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the following requirements.

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

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



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

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

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

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

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

	Breakdown/Intermediate Roller (one of the following)	Final Roller (one or more of the following)	Density Requirement
IL-9.5, IL-9.5FG, IL-19.0 <sup>1/</sup>	V <sub>D</sub> , P, T <sub>B</sub> , 3W, O <sub>T</sub> , O <sub>B</sub>	V <sub>S</sub> , T <sub>B</sub> , T <sub>F</sub> , O <sub>T</sub>	As specified in Section 1030
IL-4.75 and SMA <sup>3/ 4/</sup>	T <sub>B</sub> , 3W, O <sub>T</sub>	T <sub>F</sub> , 3W	As specified in Section 1030
Mixtures on Bridge Decks <sup>2/</sup>	T <sub>B</sub>	T <sub>F</sub>	As specified in Articles 582.05 and 582.06.

“4/ The Contractor shall provide a minimum of two steel-wheeled tandem rollers (T<sub>B</sub>), and/or three-wheel (3W) rollers for breakdown, except one of the (T<sub>B</sub>) or (3W) rollers shall be 84 inches (2.14 m) wide and a weight of 315 pound per linear inch (PLI) (5.63 kg/mm) and one of the (T<sub>B</sub>) or (3W) rollers can be substituted for an oscillatory roller (O<sub>T</sub>). T<sub>F</sub> rollers shall be a minimum of 280 lb/in. (50 N/mm). The 3W and T<sub>B</sub> rollers shall be operated at a uniform speed not to exceed 3 mph (5 km/h), with the drive roll for T<sub>B</sub> rollers nearest the paver and maintain an effective rolling distance of not more than 150 ft (45 m) behind the paver.”

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

“The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface Mix Design’s G<sub>mb</sub>.”

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

“A test strip of 300 ton (275 metric tons), except for SMA mixtures it will be 400 ton (363 metric ton), will be required for each mixture on each contract at the beginning of HMA production for each construction year according to the Manual of Test Procedures for Materials “Hot Mix Asphalt Test Strip Procedures”. At the request of the Producer, the Engineer may waive the test strip if previous construction during the current construction year has demonstrated the constructability of the mix using Department test results.”

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

“When a test strip is constructed, the Contractor shall collect and split the mixture according to the document “Hot-Mix Asphalt Test Strip Procedures”. The Engineer, or a representative, shall deliver split sample to the District Laboratory for verification testing. The Contractor shall complete mixture tests stated in Article 1030.09(a). Mixture sampled shall include enough material for the Department to conduct mixture tests detailed in Article 1030.09(a) and in the document “Hot-Mix Asphalt Mixture Design Verification Procedure” Section 3.3. The mixture test results shall meet the requirements of Articles 1030.05(b) and 1030.05(d), except Hamburg wheel tests will only be conducted on High ESAL mixtures during production.”

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

Effective: January 1, 2019

Revised: December 1, 2021

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

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

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

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

1/ The compacted gyratory bricks for Hamburg wheel and I-FIT testing shall be  $7.5 \pm 0.5$  percent air voids.

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

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

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

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

“Mixture sampled during first day of production shall include approximately 60 lb (27 kg) of additional material for the Department to conduct Hamburg wheel testing and approximately 80 lb (36 kg) of additional material for the Department to conduct I-FIT testing. Within two working days after sampling, the Contractor shall deliver prepared samples to the District laboratory for verification testing. The required number and size of prepared samples submitted for the Hamburg wheel and I-FIT testing shall be according to the “High ESAL - Required Samples for Verification Testing” table in Article 1030.05(d)(3) above.”

**ADJUSTMENTS AND RECONSTRUCTIONS (D-1)**

Effective: March 15, 2011

Revised: October 1, 2021

Revise the first paragraph of Article 602.04 to read:

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

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

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

Revise Article 603.05 to read:

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

Revise Article 603.06 to read:

**“603.06 Replacement of Existing Rigid Pavement.** After the castings have been adjusted, the pavement and HMA that was removed, shall be replaced with Class PP-2 concrete, unless otherwise noted in the plans, not less than 9 in. (225 mm) thick. The pavement may be opened to traffic according to Article 701.17(e)(3)b.

The surface of the Class PP concrete shall be constructed flush with the adjacent surface.”

Revise the first sentence of Article 603.07 to read:

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

**DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (D-1)**

Effective: April 1, 2011

Revised: April 2, 2011

Add the following to Article 603.02 of the Standard Specifications:

- “(i) Temporary Hot-Mix Asphalt (HMA) Ramp (Note 1) ..... 1030
- “(j) Temporary Rubber Ramps (Note 2)

Note 1. The HMA shall have maximum aggregate size of 3/8 in. (95 mm).

Note 2. The rubber material shall be according to the following.

Property	Test Method	Requirement
Durometer Hardness, Shore A	ASTM D 2240	75 ±15
Tensile Strength, psi (kPa)	ASTM D 412	300 (2000) min
Elongation, percent	ASTM D 412	90 min
Specific Gravity	ASTM D 792	1.0 - 1.3
Brittleness, °F (°C)	ASTM D 746	-40 (-40)”

Revise Article 603.07 of the Standard Specifications to read:

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

When castings are under traffic before the final surfacing operation has been started, properly sized temporary ramps shall be placed around the drainage and/or utility castings according to the following methods.

- (a) Temporary Asphalt Ramps. Temporary hot-mix asphalt ramps shall be placed around the casting, flush with its surface and decreasing to a featheredge in a distance of 2 ft (600 mm) around the entire surface of the casting.
- (b) Temporary Rubber Ramps. Temporary rubber ramps shall only be used on roadways with permanent posted speeds of 40 mph or less and when the height of the casting to be protected meets the proper sizing requirements for the rubber ramps as shown below.

Dimension	Requirement
Inside Opening	Outside dimensions of casting + 1 in. (25 mm)

Thickness at inside edge	Height of casting $\pm$ 1/4 in. (6 mm)
Thickness at outside edge	1/4 in. (6 mm) max.
Width, measured from inside opening to outside edge	8 1/2 in. (215 mm) min

Placement shall be according to the manufacturer's specifications.

Temporary ramps for castings shall remain in place until surfacing operations are undertaken within the immediate area of the structure. Prior to placing the surface course, the temporary ramp shall be removed. Excess material shall be disposed of according to Article 202.03."

**AVAILABLE REPORTS**

- No project specific reports were prepared.

When applicable, the following checked reports and record information is available for Bidders' reference upon request:

- Record structural plans
- Preliminary Site Investigation (PSI) (IDOT ROW)
- Preliminary Site Investigation (PSI) (LOCAL ROW)
- Preliminary Environmental Site Assessment (PESA) (IDOT ROW)
- Preliminary Environmental Site Assessment (PESA) (LOCAL ROW)
- Soils/Geotechnical Reports
- Boring Logs
- Pavement Cores
- Location Drainage Study (LDS)
- Hydraulic Report
- Noise Analysis
- Other:

Those seeking these reports should request access from:

Alex Schaefer, Project Manager  
Christopher B. Burke Engineering, Ltd.  
Phone: 815-770-2850  
Email: [aschaefer@cbbel.com](mailto:aschaefer@cbbel.com)



## **IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION**

Effective: August 1, 2012      Revised: February 2, 2017

In addition to the Contractor's equal employment opportunity (EEO) affirmative action efforts undertaken as required by this Contract, the Contractor is encouraged to participate in the incentive program described below to provide additional on-the-job training to certified graduates of the IDOT pre-apprenticeship training program, as outlined in this Special Provision.

IDOT funds, and various Illinois community colleges operate, pre-apprenticeship training programs throughout the State to provide training and skill-improvement opportunities to promote the increased employment of minority groups, disadvantaged persons and women in all aspects of the highway construction industry. The intent of this IDOT Pre-Apprenticeship Training Program Graduate (TPG) special provision (Special Provision) is to place these certified program graduates on the project site for this Contract in order to provide the graduates with meaningful on-the-job training. Pursuant to this Special Provision, the Contractor must make every reasonable effort to recruit and employ certified TPG trainees to the extent such individuals are available within a practicable distance of the project site.

Specifically, participation of the Contractor or its subcontractor in the Program entitles the participant to reimbursement for graduates' hourly wages at \$15.00 per hour per utilized TPG trainee, subject to the terms of this Special Provision. Reimbursement payment will be made even though the Contractor or subcontractor may also receive additional training program funds from other non-IDOT sources for other non-TPG trainees on the Contract, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving reimbursement from another entity through another program, such as IDOT through the TPG program. With regard to any IDOT funded construction training program other than TPG, however, additional reimbursement for other IDOT programs will not be made beyond the TPG Program described in this Special Provision when the TPG Program is utilized.

No payment will be made to the Contractor if the Contractor or subcontractor fails to provide the required on-site training to TPG trainees, as solely determined by IDOT. A TPG trainee must begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee must remain on the project site through completion of the Contract, so long as training opportunities continue to exist in the relevant work classification. Should a TPG trainee's employment end in advance of the completion of the Contract, the Contractor must promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor must supply a written report for the reason the TPG trainee involvement terminated, the hours completed by the TPG trainee on the Contract, and the number of hours for which the incentive payment provided under this Special Provision will be, or has been claimed for the separated TPG trainee.

Finally, the Contractor must maintain all records it creates as a result of participation in the Program on the Contract, and furnish periodic written reports to the IDOT District EEO Officer that document its contractual performance under and compliance with this Special Provision. Finally, through participation in the Program and reimbursement of wages, the Contractor is not relieved of, and IDOT has not waived, the requirements of any federal or state labor or employment law applicable to TPG workers, including compliance with the Illinois Prevailing Wage Act.

**METHOD OF MEASUREMENT:** The unit of measurement is in hours.

BASIS OF PAYMENT: This work will be paid for at the contract unit price of \$15.00 per hour for each utilized certified TPG Program trainee (TRAINEES TRAINING PROGRAM GRADUATE). The estimated total number of hours, unit price, and total price must be included in the schedule of prices for the Contract submitted by Contractor prior to beginning work. The initial number of TPG trainees for which the incentive is available for this contract is 3.

The Department has contracted with several educational institutions to provide screening, tutoring and pre-training to individuals interested in working as a TPG trainee in various areas of common construction trade work. Only individuals who have successfully completed a Pre-Apprenticeship Training Program at these IDOT approved institutions are eligible to be TPG trainees. To obtain a list of institutions that can connect the Contractor with eligible TPG trainees, the Contractor may contact: HCCTP TPG Program Coordinator, Office of Business and Workforce Diversity (IDOT OBWD), Room 319, Illinois Department of Transportation, 2300 S. Dirksen Parkway, Springfield, Illinois 62764. Prior to commencing construction with the utilization of a TPG trainee, the Contractor must submit documentation to the IDOT District EEO Officer for the Contract that provides the names and contact information of the TPG trainee(s) to be trained in each selected work classification, proof that that the TPG trainee(s) has successfully completed a Pre-Apprenticeship Training Program, proof that the TPG is in an Apprenticeship Training Program approved by the U.S. Department of Labor Bureau of Apprenticeship Training, and the start date for training in each of the applicable work classifications.

To receive payment, the Contractor must provide training opportunities aimed at developing a full journeyworker in the type of trade or job classification involved. During the course of performance of the Contract, the Contractor may seek approval from the IDOT District EEO Officer to employ additional eligible TPG trainees. In the event the Contractor subcontracts a portion of the contracted work, it must determine how many, if any, of the TPGs will be trained by the subcontractor. Though a subcontractor may conduct training, the Contractor retains the responsibility for meeting all requirements imposed by this Special Provision. The Contractor must also include this Special Provision in any subcontract where payment for contracted work performed by a TPG trainee will be passed on to a subcontractor.

Training through the Program is intended to move TPGs toward journeyman status, which is the primary objective of this Special Provision. Accordingly, the Contractor must make every effort to enroll TPG trainees by recruitment through the Program participant educational institutions to the extent eligible TPGs are available within a reasonable geographic area of the project. The Contractor is responsible for demonstrating, through documentation, the recruitment efforts it has undertaken prior to the determination by IDOT whether the Contractor is in compliance with this Special Provision, and therefore, entitled to the Training Program Graduate reimbursement of \$15.00 per hour.

Notwithstanding the on-the-job training requirement of this TPG Special Provision, some minimal off-site training is permissible as long as the offsite training is an integral part of the work of the contract, and does not compromise or conflict with the required on-site training that is central to the purpose of the Program. No individual may be employed as a TPG trainee in any work classification in which he/she has previously successfully completed a training program leading to journeyman status in any trade, or in which he/she has worked at a journeyman level or higher.

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:

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

State of Illinois  
 DEPARTMENT OF TRANSPORTATION  
 Bureau of Local Roads & Streets  
 SPECIAL PROVISION  
 FOR  
 LOCAL QUALITY ASSURANCE/ QUALITY MANAGEMENT QC/QA  
 Effective: January 1, 2022

Replace the first five paragraphs of Article 1030.06 of the Standard Specifications with the following:

**“1030.06 Quality Management Program.** The Quality Management Program (QMP) will be Quality Control / Quality Assurance (QC/QA) according to the following.”

Delete Article 1030.06(d)(1) of the Standard Specifications.

Revise Article 1030.09(g)(3) of the Standard Specifications to read:

“(3) If core testing is the density verification method, the Contractor shall provide personnel and equipment to collect density verification cores for the Engineer. Core locations will be determined by the Engineer following the document “Hot-Mix Asphalt QC/QA Procedure for Determining Random Density Locations” at density verification intervals defined in Article 1030.09(b). After the Engineer identifies a density verification location and prior to opening to traffic, the Contractor shall cut a 4 in. (100 mm) diameter core. With the approval of the Engineer, the cores may be cut at a later time.”

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

“(2) After final rolling and prior to paving subsequent lifts, the Engineer will identify the random density verification test locations. Cores or nuclear density gauge testing will be used for density verification. The method used for density verification will be as selected below.

Density Verification Method	
<input checked="" type="checkbox"/>	Cores
<input type="checkbox"/>	Nuclear Density Gauge (Correlated when paving ≥ 3,000 tons per mixture)

Density verification test locations will be determined according to the document “Hot-Mix Asphalt QC/QA Procedure for Determining Random Density Locations”. The density testing interval for paving wider than or equal to 3 ft (1 m) will be 0.5 miles (800 m) for lift thicknesses of 3 in. (75 mm) or less and 0.2 miles (320 m) for lift thicknesses greater than 3 in. (75 mm). The density testing interval for paving less than 3 ft (1 m) wide will be 1 mile (1,600 m). If a day’s paving will be less than the prescribed density testing interval, the length of the day’s paving will be the interval for that day. The density testing interval for mixtures used for patching will be 50 patches with a minimum of one test per mixture per project.

If core testing is the density verification method, the Engineer will witness the Contractor coring, and secure and take possession of all density samples at the

density verification locations. The Engineer will test the cores collected by the Contractor for density according to Illinois Modified AASHTO T 166 or AASHTO T 275.

If nuclear density gauge testing is the density verification method, the Engineer will conduct nuclear density gauge tests. The Engineer will follow the density testing procedure detailed in the document "Illinois Modified ASTM D 2950, Standard Test Method for Density of Bituminous Concrete In-Place by Nuclear Method".

A density verification test will be the result of a single core or the average of the nuclear density tests at one location. The results of each density test must be within acceptable limits. The Engineer will promptly notify the Contractor of observed deficiencies."

Revise the seventh paragraph and all subsequent paragraphs in Section D. of the document "Hot-Mix Asphalt QC/QA Initial Daily Plant and Random Samples" to read:


"Mixtures shall be sampled from the truck at the plant by the Contractor following the same procedure used to collect QC mixture samples (Section A). This process will be witnessed by the Engineer who will take custody of the verification sample. Each sample bag with a verification mixture sample will be secured by the Engineer using a locking ID tag. Sample boxes containing the verification mixture sample will be sealed/taped by the Engineer using a security ID label."



Route FAP 351	Marked Route Illinois Route 7 (E. 9th Street)	Section Number 18-00084-00-WR
Project Number QJVK(783)	County Will	Contract Number 61H98

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 6-8-2023
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Print Name Brian Lovering, PE	Title Assistant Director of Public Works	Agency City of Lockport
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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:  
 Section 23/24 Township 36N Range 10E Lat: 41.5907 Long: -88.0435

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 project scope includes roadway reconstruction, widening, resurfacing, culvert, storm sewer and water main installation.

C. Provide the estimated duration of this project:  
 12 months

D. The total area of the construction site is estimated to be 6.4 acres.  
 The total area of the site estimated to be disturbed by excavation, grading or other activities is 6.4 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:  
 0.85

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

G. If wetlands were delineated for this project, provide an extent of wetland acreage at the site; see Phase I report:  
 Wetland limits are shown within the wetland delineation report and plans.

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

Milne Creek and tributary ditch within the project limits.

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.):

See plans and SWPPP binder.

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:

City of Lockport

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

City of Lockport

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:

Milne Creek and associated wetlands

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.

The project has been designated and permitted in compliance with USACE Regional Permit #3 (USACE No.: LRC 2020-01056)

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.

Milne Creek

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:

N/A

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:

SESC BMPs shall be installed per plans and specs.

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

N/A

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

Dewatering shall occur as needed, and shall occur per the IL Urban Manual.

Applicable Federal, Tribal, State, or Local Programs

Floodplain

Historic Preservation

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:

N/A

Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

N/A

If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

N/A

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

Other

Wetland

Complete - USACE No.: LRC 2020-01056

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

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Antifreeze / Coolants  | <input checked="" type="checkbox"/> Solid Waste Debris                                |
| <input checked="" type="checkbox"/> Concrete   | <input checked="" type="checkbox"/> Solvents  |
| <input checked="" type="checkbox"/> Concrete Curing Compounds                                      | <input checked="" type="checkbox"/> Waste water from cleaning construction equipments |
| <input type="checkbox"/> Concrete Truck Waste  | <input type="checkbox"/> Other (Specify) _____  |
| <input checked="" type="checkbox"/> Fertilizers / Pesticides                                       | <input type="checkbox"/> Other (Specify) _____  |
| <input checked="" type="checkbox"/> Paints   | <input type="checkbox"/> Other (Specify) _____  |
| <input checked="" type="checkbox"/> Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids) | <input type="checkbox"/> Other (Specify) _____  |
| <input checked="" type="checkbox"/> Soil Sediment  | <input type="checkbox"/> 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:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Erosion Control Blanket / Mulching | <input checked="" type="checkbox"/> Temporary Turf (Seeding, Class 7) |
| <input checked="" type="checkbox"/> Geotextiles                        | <input checked="" type="checkbox"/> Temporary Mulching                |
| <input checked="" type="checkbox"/> Permanent Seeding                  | <input type="checkbox"/> Vegetated Buffer Strips                      |
| <input checked="" type="checkbox"/> Preservation of Mature Seeding     | <input type="checkbox"/> Other (Specify) _____                        |
| <input checked="" type="checkbox"/> Protection of Trees                | <input type="checkbox"/> Other (Specify) _____                        |
| <input checked="" type="checkbox"/> Sodding                            | <input type="checkbox"/> Other (Specify) _____                        |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding  | <input type="checkbox"/> Other (Specify) _____                        |

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

See plans and SWPPP binder.

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

See plans and SWPPP binder.

**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.

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

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

See plans and SWPPP binder.

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

See plans and SWPPP binder.

**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.

TBD - Use of polymers will occur dependent upon field conditions.

**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:

WOUS Crossing improvements.

**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:

Will-South Cook SWCD, USEPA, and IEPA

**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.

Action items noted in routine and post-storm NPDES reports shall be repaired within 7 days of discovery.

### 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](mailto: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 Environmental Protection Agency

Bureau of Water • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

## Division of Water Pollution Control Notice of Intent (NOI) for General Permit to Discharge Storm Water Associated with Construction Site Activities

### Permit Information

Master Permit Number: ILR100000

NPDES ID: ILR10ZD5S

State/Territory to which your project/site is discharging: IL

Is your project/site located on federally recognized Indian Country Lands? No

By Indicating "Yes" below, I confirm that I understand that this General Permit only authorizes the allowable stormwater discharges in Part I.B.1 and Part I.B.2. Any discharges not expressly authorized in part I.B.3 of this permit cannot become authorized or shielded from liability under CWA Section 402(k) by disclosure to EPA, State, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater discharges listed in Part I.B.1 and Part I.B.2, they must be covered under another NPDES permit.

Yes

Is your construction site less than one acre? No

### Owner and Operator Information

#### Owner (Company) Information

Owner (Company) Name: City of Lockport

Owner Type: Permitted MS4

➔ Select Permitted MS4: Lockport MS4

#### Owner (Company) Mailing Address

Address Line 1: 17112 S Prime Boulevard

Address Line 2:

City: Lockport

ZIP/Postal Code: 60441

State: IL

#### Owner (Company) Point of Contact Information

First Name Middle Initial Last Name: Brian Lovering

Professional Title: Assistant Director of Public Works & Eng

Phone: 815-838-0549

Ext.: 2314

Email: blovering@lockport.org

#### Operator (Contractor) Information

Is the Operator Information the same as the Owner Information? Yes

#### NOI Preparer Information

This NOI is being prepared by someone other than the certifier.

### Project/Site Information

Project/Site Name: East 9th Street (IL Route 7) Roadway Improvements

#### Project/Site Location

Address Line 1: East 9th Street (IL Route 7)

Address Line 2:

City: Lockport

ZIP/Postal Code: 60441

State: IL

County or Similar Division: Will

Latitude/Longitude for the Project

Latitude/Longitude Format: [Decimal Degrees](#)

Latitude/Longitude: [41.590887°N, 88.043215°W](#)

## Other Project Information

Approximate Construction Start Date: [03/01/2024](#)

Approximate Construction End Date: [12/31/2025](#)

Total Size of Construction Site in Acres: [6.4](#)

Type of Construction: [Transportation](#)

SIC Code:

Type a detailed description of the Project:

Roadway reconstruction, pavement removal, widening, resurfacing, drainage and utility structure adjustments and installations (culvert, storm sewer, and water main), in addition to SESC BMP installation, maintenance, and final stabilization.

### SWPPP Information

Has the SWPPP been prepared in advance of filing this NOI as required? [Yes](#)

## SWPPP Contact Information

First Name Middle Initial Last Name: [Brian](#) [Lovering](#)

Organization:

Professional Title: [Assistant Director of Public Works & Eng](#)

Phone: [815-838-0549](#)

Ext.: [2314](#)

Email: [blovering@lockport.org](mailto:blovering@lockport.org)

## Project Inspector

Is the Project Inspector Information the same as the SWPPP Contact Information? [No](#)

First Name Middle Initial Last Name: [Dan](#) [Schroeder](#)

Organization:

Professional Title: [Construction Engineer](#)

Phone: [847-823-0500](#)

Ext.:

Email: [dschroeder@cbbel.com](mailto:dschroeder@cbbel.com)

Use the space below to upload a copy of your SWPPP.

Name	Uploaded Date	Size
 IL Route 7 (E 9th Street) SWPPP reduced.pdf (attachment/1700913)	07/21/2023	17.52 MB

### Receiving Water Information

Does your storm water discharge directly to: [Storm Sewer](#)

Owner of Storm Sewer System: [City of Lockport](#)

Name of closest receiving waterbody to which you discharge: [Milne Creek/Lockport Mainstream](#)

### Historic Preservation and Endangered Species Compliance

Historic Preservation Office:

Use the space below to upload a copy of your Historic Preservation Office approval letter.

Name	Uploaded Date	Size
 Cultural Clearance memo.pdf (attachment/1700914)	07/21/2023	258.45 KB

IDNR Impact Assessment Section:

Use the space below to upload a copy of your EcoCAT approval letter.

Name	Uploaded Date	Size
 signed_NRR_2022.pdf (attachment/1700915)	07/21/2023	144.58 KB

### Certification Information

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 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. Signing an electronic document on behalf of another person is subject to criminal, civil, administrative, or other lawful action.

Certified By: [Adam Janicki](#)

Certifier Title: [Environmental Resources Specialist](#)





DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT  
231 SOUTH LA SALLE STREET, SUITE 1500  
CHICAGO IL 60604-1437

August 15, 2023

Regulatory Branch (LRC-2020-01056)

SUBJECT: Nationwide Permit Authorization for Illinois Route 7, Lockport, Will County, Illinois (Latitude 41.58897°N, Longitude -88.04564°W)

Brent Cann  
City of Lockport  
17112 South Prime Boulevard  
Lockport, Illinois 60441

Dear Mr. Cann:

This letter is in response to your application, received July 12, 2023, for the above-referenced project.

The project is covered under Nationwide Permits No. 14 as published in the enclosed Fact Sheet No. 9 (IL), provided you meet the permit conditions for the nationwide permits, which are included in the Fact Sheets. The Corps has also made a determination of no effect on federally threatened and endangered species or critical habitat. The Illinois Environmental Protection Agency (IEPA) has also issued Section 401 Water Quality Certification with conditions for this nationwide permit. Please note these additional conditions included in the Fact Sheet. The decision regarding this action is based on information found in the administrative record, which documents the District's decision-making process, the basis for the decision, and the final decision.

This authorization is contingent on the following special conditions:

You shall implement and maintain soil erosion and sediment controls in a serviceable condition throughout the duration of the project. You shall comply with the Will-South Cook Soil and Water Conservation District's (SWCD) written and verbal recommendations regarding the soil erosion and sediment control (SESC) plan and the installation and maintenance requirements of the SESC practices on-site.

- You shall schedule a preconstruction meeting with SWCD to discuss the SESC plan and the installation and maintenance requirements of the SESC practices on the site. You shall contact the SWCD at least 10 calendar days prior to the preconstruction meeting so that a representative may attend.
- You shall notify the SWCD of any changes or modifications to the approved plan set. Field conditions during project construction may require the implementation of additional SESC measures. If you fail to implement corrective measures, this



office may require more frequent site inspections to ensure the installed SESC measures are acceptable.

- Prior to commencement of any in-stream work, you shall submit constructions plans and a detailed narrative to the SWCD that disclose the contractor's preferred method of cofferdam and dewatering method. Work in the waterway shall NOT commence until the SWCD notifies you, in writing, that the plans have been approved.

This verification is valid until March 14, 2026, unless the nationwide permit is modified, reissued, or revoked. It is your responsibility to remain informed of changes to the nationwide permit program. We will issue a public notice announcing any changes if and when they occur. Furthermore, if you commence or are under contract to commence this activity before the date the nationwide permit is modified or revoked, you will have twelve months from that date to complete your activity under the present terms and conditions of this nationwide permit. If the project plans change, you should contact our office for another determination.

This authorization does not eliminate the requirement that you must still acquire other applicable Federal, state, and local permits. If you have not already coordinated your project with the Illinois Department of Natural Resources – Offices of Water Resources, please contact them at 217/782-3863 to determine if a floodplain development permit is required for your project.

You may contact the IEPA Facility Evaluation Unit at 217/782-3362 to determine whether additional authorizations are required from the IEPA. Please send any electronic correspondence to [Epa.401.docs@illinois.gov](mailto:Epa.401.docs@illinois.gov).

The Chicago District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to go to our Customer Service Survey found on our website at: <https://regulatory.ops.usace.army.mil/ords/f?p=136:4>

Once you have completed the authorized activity, please sign and return the enclosed compliance certification as required by general condition 30. If you have any questions, please contact me by telephone at (773) 909-1628, or email at [Samantha.J.Chavez@usace.army.mil](mailto:Samantha.J.Chavez@usace.army.mil).

Sincerely,

**Samantha J. Chavez** Digitally signed by Samantha J. Chavez  
Date: 2023.08.15 10:32:11 -05'00'

Samantha Chavez  
Project Manager  
Regulatory Branch



*Leadership in Resource Management Since 1946*

1201 S. Gougar Rd • New Lenox, IL 60451  
(815) 462-3106 • Fax (815) 462-3176  
[www.will-scookswcd.org](http://www.will-scookswcd.org)

Brent Cann  
City of Lockport  
17112 S. Prime Blvd.  
Lockport, IL 60441

January 28, 2021

**Erosion Control Plan Review**

ACOE# LRC-2020-1056  
WSCSWCD# 20-570  
Lockport – Route 7 Improvements

Dear Mr. Cann:

We have reviewed the documents dated January 08, 2021 as they relate to erosion control measures pertaining to the above-mentioned project. The plan meets the technical standards of the Will-South Cook SWCD for SESC and is hereby approved.

Please keep a copy of the approved documents on site at all times for review, upon request, by the Will-South Cook SWCD or any other authorized agency. Please also notify our office of the preconstruction meeting or at the start of work.

If you have any questions, please contact Dan Jay at (815) 462-3106, ext. 3.

Sincerely,  
Will / South Cook SWCD

Daniel Jay, P.E., CFM, CPESC  
Resource Conservationist

cc: Kathleen Chernich, ACOE  
Thomas McArdle, CBBEL

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

1021 North Grand Avenue, East; Post Office Box 19276; Springfield, IL 62794-9276

Division of Public Water Supplies

Telephone 217/782-1724

**PUBLIC WATER SUPPLY CONSTRUCTION PERMIT**

SUBJECT: LOCKPORT (IL1970500)

Permit Issued to:

Lockport

17112 Prime Blvd.

Lockport, IL 60441

PERMIT NUMBER: 0033-FY2024

DATE ISSUED: September 29, 2023

PERMIT TYPE: Water Main Extension

The issuance of this permit is based on plans and specifications prepared by the engineers/architects indicated, and are identified as follows. This permit is issued for the construction and/or installation of the public water supply improvements described in this document, in accordance with the provisions of the Environmental Protection Act, Title IV, Sections 14 through 17, and Title X, Sections 39 and 40, and is subject to the conditions printed on the last page of this permit and the ADDITIONAL CONDITIONS listed below.

FIRM: Christopher B. Burke Engineering, Ltd.

NUMBER OF PLAN SHEETS: 210

TITLE OF PLANS: "Illinois Route 7 Widening and Resurfacing"

APPLICATION RECEIVED DATE: July 5, 2023

**PROPOSED IMPROVEMENTS:**

\*\*\* The installation of approximately 18 feet of 4-inch diameter watermain, 108 feet of 6-inch diameter watermain, 1,080 feet of 8-inch diameter watermain, and 3,924 feet of 12-inch diameter watermain along Illinois Route 7 in Lockport, IL.\*\*\*\*\*

**ADDITIONAL CONDITIONS:**

1. All water mains shall be satisfactorily disinfected prior to use pursuant to Ill. Adm. Code, Title 35, Subtitle F, Section 602.310. Two consecutive sets of samples collected at least 24 hours apart must show the absence of coliform bacteria. The samples must be collected from every 1,200 feet of new water main along each branch and from the end of the line. An operating permit must be obtained before the project is placed in service.
2. When the owner or operator of a community water supply replaces a water main, the community water supply shall identify all lead service lines connected to the water main and shall comply with the requirements of Section 17.12 of the Act, 415 ILCS 5/17.12 for lead service line replacement. Galvanized service line must also be replaced if the galvanized service line is or was connected downstream to the lead piping. A statement must be submitted with the Application for Operating Permit indicating either that no full or partial lead service lines were identified or that Section 17.12 of the Act was complied with for this project.

LOCKPORT (IL1970500)

PERMIT NUMBER: 0033-FY2024

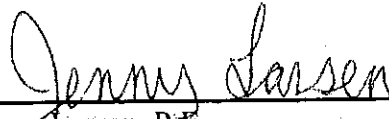
DATE ISSUED: September 29, 2023

Page 2

3. When replacing water mains with lead service lines or partial lead service lines connected to them, the owner or operator of the community water supply shall provide the owner or operator of each potentially affected building that is serviced by the affected lead service lines or partial lead service lines, as well as the occupants of those buildings, with an individual written notice. The lead informational notice shall be provided at least 14 days prior to permitted water main work. The notification provided by the community water supply must satisfy the requirements of Section 17.12(jj) of the Act, 415 ILCS 5/17.12(jj). A copy of the notice used must be submitted to the Agency with the Application for Operating Permit.
4. Per Executive Order V contact the Illinois Department of Natural Resources (IDNR), Office of Water Resources. IDNR may require a permit pursuant to State statutes which requires all development within a Special Flood Hazard Area to comply with the requirements of 17 Illinois Adm. Code Part 3700 or 17 Illinois Adm. Code Part 3708, whichever is applicable. Additionally, local floodplain permits may be required as a local floodplain management ordinance may require compliance with higher standards than those of the National Flood Insurance Program (44 CFR 59-79).
5. The permit approval is for the Application, Schedule A, Schedule B, and 210 plan sheets received on July 5, 2023 and additional information received on August 15, 2023 and September 8, 2023.

JML:LKW

cc: Christopher B. Burke Engineering, Ltd.  
Elgin Regional Office  
IDPH/DEH Plumbing & Water Quality Program



Jenny Larsen, P.E.

Working Supervisor, Permit Section – Unit B  
Division of Public Water Supplies

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS  
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Agency Act (415 ILCS 5/39) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

These standard conditions shall apply to all permits which the Agency issues for construction or development projects which require permits under the Division of Water Pollution Control, Air Pollution Control, Public Water Supplies and Land Pollution Control. Special conditions may also be imposed by the separate divisions in addition to these standard conditions.

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year after this date of issuance unless construction or development on this project has started on or prior to that date.
2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.
4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:
  - a. to enter at reasonable times the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit.
  - b. to have access to and copy at reasonable times any records required be kept under the terms and conditions of this permit.
  - c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.
  - d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.
  - e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.
5. The issuance of this permit:
  - a. shall not be considered as in any manner affecting the title of the permits upon which the permitted facilities are to be located;
  - b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
  - c. does not release the permittee from compliance with the other applicable statues and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
  - d. does not take into consideration or attest to the structural stability of any units or parts of the project;
  - e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability directly or indirectly for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
6. These standard conditions shall prevail unless modified by special conditions.
7. The Agency may file a complaint with Board of modification, suspension or revocation of a permit:
  - a. upon discovery that the permit application misrepresentation or false statements or that all relevant facts were not disclosed; or
  - b. upon finding that any standard or special conditions have been violated; or
  - c. upon any violation of the Environmental Protection Act or any Rules or Regulation effective thereunder as a result of the construction or development authorized by this permit.



# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

## Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

### I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: IDOT 199-014 WO 28A IL-7 (East 9th St.) - PSI Office Phone Number, if available: 847-705-4122

Physical Site Location (address, including number and street):

IL-7 (East 9th Street) from Madison Street to Summit Drive, see attached documentation

City: Lockport State: IL Zip Code: 60441

County: Will Township: Lockport

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 42.58984 Longitude: - 87.04442

(Decimal Degrees) (-Decimal Degrees)

Identify how the lat/long data were determined:

- GPS  Map Interpolation  Photo Interpolation  Survey  Other

Google Earth - Approximate center of Project Corridor

IEPA Site Number(s), if assigned: BOL: NA BOW: NA BOA: NA

Approximate Start Date (mm/dd/yyyy): \_\_\_\_\_ Approximate End Date (mm/dd/yyyy): \_\_\_\_\_

Estimated Volume of debris (cu. Yd.): \_\_\_\_\_

### II. Owner/Operator Information for Source Site

Site Owner

Name: Illinois Dept of Transportation, District 1

Street Address: 201 W. Center Court

PO Box: \_\_\_\_\_

City: Schaumburg State: IL

Zip Code: 60196 Phone: 847-705-4122

Contact: Irma Romiti-Johnson

Email, if available: Irma.Romiti-Johnson@illinois.gov

Site Operator

Name: Illinois Dept of Transportation, District 1

Street Address: 201 W. Center Court

PO Box: \_\_\_\_\_

City: Schaumburg State: IL

Zip Code: 60196 Phone: 847-705-4122

Contact: Irma Romiti-Johnson

Email, if available: Irma.Romiti-Johnson@illinois.gov

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Uncontaminated Soil Certification

**III. Basis for Certification and Attachments**

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a):

Refer to Figure 4-1.a through 4-1.c in the Final PSI Report and attachment for a list of borings with stationing.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0, including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201 (g), 1100.205(a), 1100.610]:

Refer to Tables 4-2 and 4-3 in the Final PSI Report for results summary and First Environmental Laboratories, Inc. report numbers #23-7418; #23-7628; #23-7671; #23-7440; and #23-7793. Site specific table of results is attached to this form.

**IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist**


I, Jeremy J. Reynolds, P.G. (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

**Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))**

Company Name: Huff & Huff, Inc. / GZA GeoEnvironmental, Inc.  
Street Address: 915 Harger Road, Suite 330  
City: Oak Brook State: IL Zip Code: 60523  
Phone: 630-684-9100

Jeremy J. Reynolds, P.G.  
Printed Name:

  
\_\_\_\_\_  
Licensed Professional Engineer or  
Licensed Professional Geologist Signature:

Nov 9, 2023  
Date:  
  
P.E or L.P.G. Seal:

**LPC-663**  
**Uncontaminated Soil Certification Form**  
**Attachment**

Below is a list referenced in Section I (Source Location Information) of the attached LPC-663 Uncontaminated Soil Certification Form, which requests information about Physical Site Locations (addresses, including number and street):

ISGS Site No.	Site Name
3566-4	Commercial Building
3566-5	Drake Commons
3566-8	Vacant Land
3566-9	Shepherd of the Hill Lutheran Church
3566-10	Commercial Building
3566-11	Dairy Queen
3566-12	Lockport Plaza
3566-13	Burger King
3566-15	Jim & Tom's Automotive
3566-19	Residences
3566-22	BMO Harris
3566-23	Lockport Township Fire Protection District
3566-25	Vacant Land
3566-28	Residences
3566-30	First Congressional Church
3566-32	Porter Plaza
3566-33	Motors N More
3566-34	Dominos
3566-35	Residential Buildings
3566-36	Tuffy's Auto Care
3566-37	Residential Buildings



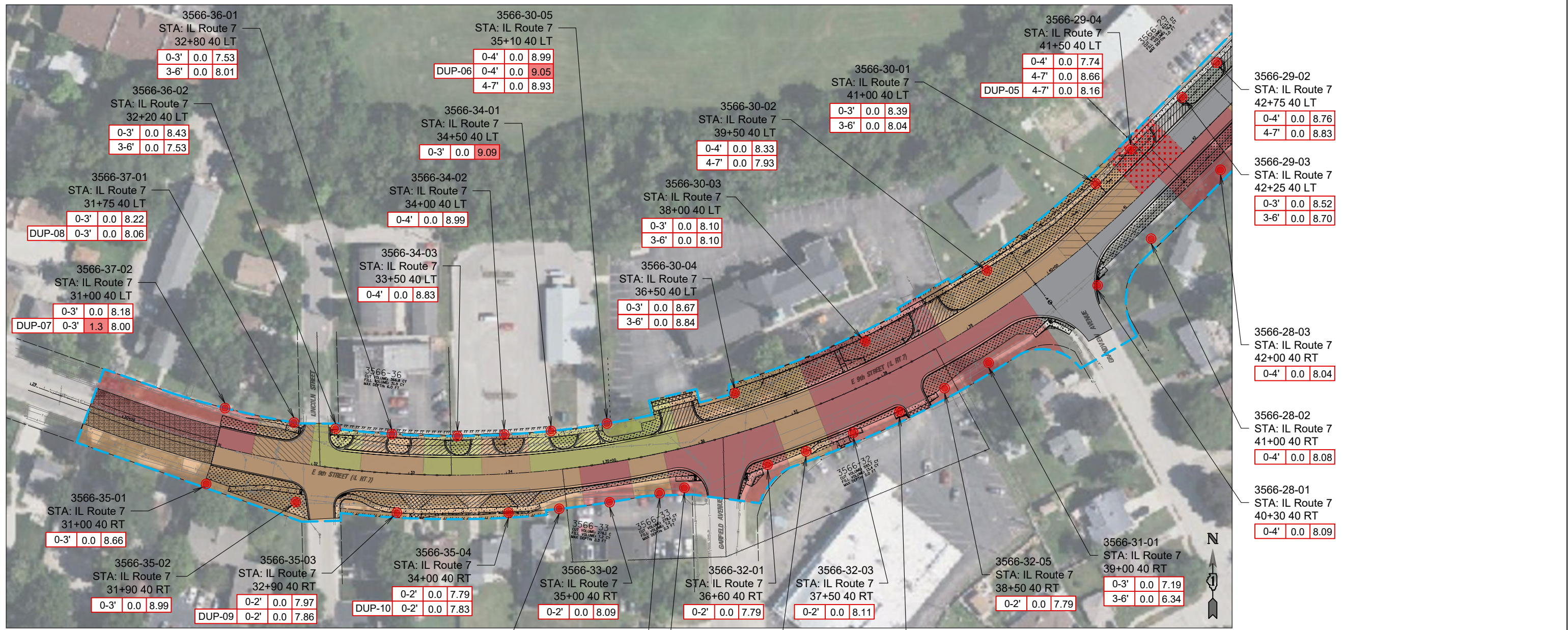
**LPC-663**  
**Uncontaminated Soil Certification Form**  
**Attachment**

Below is a list referenced in Section III A (Basis for Certification and Attachments) of the attached LPC-663 Uncontaminated Soil Certification Form, which requests a description of the soil sample points and how they were determined to be sufficient in number and appropriately located:

ISGS Boring No.	Approximate Stationing
3566-4-03	STA: IL Route 7 67+10, 45 RT
3566-5-01	STA: IL Route 7 67+20, 40 LT
3566-5-02	STA: IL Route 7 65+90, 45 LT
3566-5-03	STA: IL Route 7 65+10, 45 LT
3566-8-01	STA: IL Route 7 64+00, 40 LT
3566-8-02	STA: IL Route 7 62+00, 40 LT
3566-9-01	STA: IL Route 7 57+00, 45 RT
3566-9-02	STA: IL Route 7 58+50, 45 RT
3566-9-04	STA: IL Route 7 61+50, 45 RT
3566-10-01	STA: IL Route 7 60+80, 35 LT
3566-10-02	STA: IL Route 7 60+00, 35 LT
3566-10-03	STA: IL Route 7 59+20, 35 LT
3566-11-01	STA: IL Route 7 58+75, 40 LT
3566-11-02	STA: IL Route 7 58+00, 40 LT
3566-12-01	STA: IL Route 7 57+60, 40 LT
3566-12-02	STA: IL Route 7 56+60, 40 LT
3566-12-03	STA: IL Route 7 55+60, 40 LT
3566-34-02	STA: IL Route 7 34+00 40 LT
3566-35-01	STA: IL Route 7 31+00 40 RT
3566-35-02	STA: IL Route 7 31+90 40 RT
3566-35-03	STA: IL Route 7 32+90 40 RT

ISGS Boring No.	Approximate Stationing
3566-12-05	STA: IL Route 7 53+60, 40 LT
3566-13-02	STA: IL Route 7 55+00, 40 RT
3566-15-01	STA: IL Route 7 52+75, 40 LT
3566-15-02	STA: IL Route 7 52+00, 40 LT
3566-15-03	STA: IL Route 7 51+60, 40 LT
3566-19-01	STA: IL Route 7 50+50, 80 LT
3566-22-02	STA: IL Route 7 46+00, 40 LT
3566-23-02	STA: IL Route 7 49+50, 50 LT
3566-23-03	STA: IL Route 7 48+65, 32 LT
3566-25-01	STA: IL Route 7 45+90 17 RT
3566-28-04	STA: IL Route 7 43+00 40 RT
3566-30-01	STA: IL Route 7 41+00 40 LT
3566-30-02	STA: IL Route 7 39+50 40 LT
3566-30-04	STA: IL Route 7 36+50 40 LT
3566-32-02	STA: IL Route 7 37+00 40 RT
3566-33-01	STA: IL Route 7 34+50 40 RT
3566-33-03	STA: IL Route 7 35+50 40 RT
3566-35-04	STA: IL Route 7 34+00 40 RT
3566-36-01	STA: IL Route 7 32+80 40 LT
3566-37-01	STA: IL Route 7 31+75 40 LT

9/16/2022 IDOT\_WO#28\_20231108\_2.dwg



**Legend**

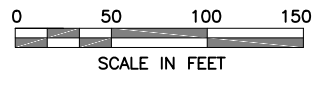
- Soil Boring Location
- PESA Site Boundary
- PID** **pH** PID Exceeds background value or pH outside acceptable range for CCDD disposal

Depth	PID	pH
0-3'	0.0	7.53
3-6'	0.0	8.01
0-3'	0.0	8.43
3-6'	0.0	7.53
0-3'	0.0	8.22
DUP-08	0-3'	8.06
0-3'	0.0	8.18
DUP-07	0-3'	8.00
0-3'	0.0	8.66
0-3'	0.0	8.99
DUP-09	0-2'	7.97
0-2'	0.0	7.86
0-2'	0.0	7.79
DUP-10	0-2'	7.83
0-2'	0.0	8.09
0-2'	0.0	8.10
0-2'	0.0	8.24
0-2'	0.0	8.11
0-2'	0.0	7.79
0-2'	0.0	8.08
0-3'	8.6	7.35

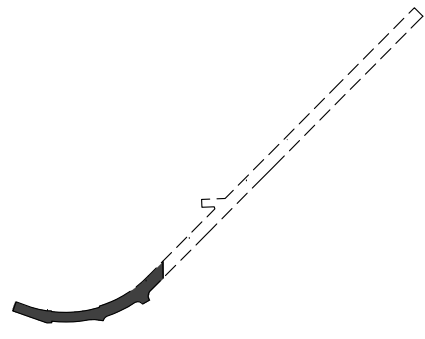
669.05(a)(1)	669.05(a)(6)
669.05(a)(2)	669.05(b)(1)
669.05(a)(3)	669.05(b)(2)
669.05(a)(4)	669.05(c)
669.05(a)(5)	669.05(d)
	WORK ZONE

**Notes:**

- Additional detail and information regarding regulated substances management and disposal classifications can be found in the Standard Specifications for Road and Bridge Construction (SSRBC) Section 669.05.
- This figure relies on color code depictions for soil management. Please contact the DESU or AE for assistance.



**Location Legend**



DESIGNED	NL
DRAWN	SCC
CHECKED	NL
APPROVED	
DATE	11/08/2023

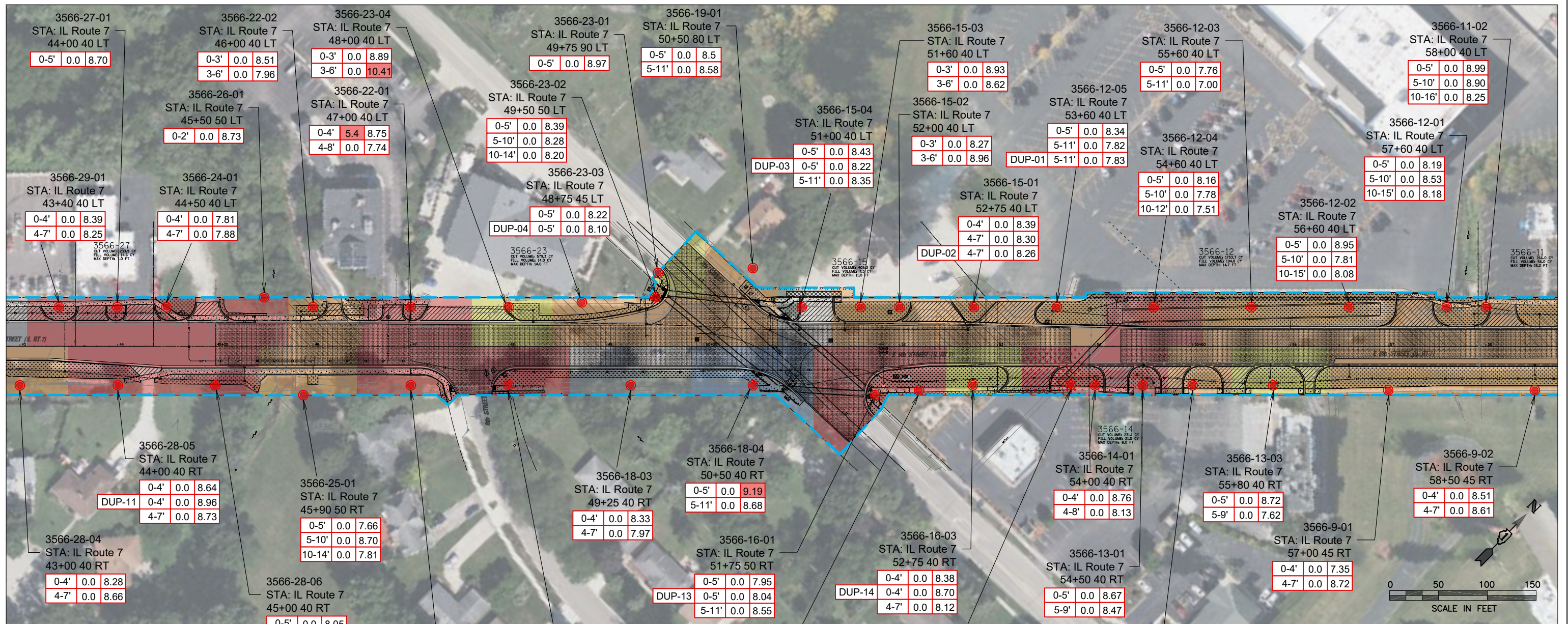


WO No. 28  
 3030 WARRENVILLE RD  
 LISLE, ILLINOIS  
 60532  
 PH (888) 405-1742

FIGURE 4-1a Regulated Substances Management Area	
Location: IL Route 7 (9th Street) Lockport, IL	
Contract	
PESA: 3566V	Route FAP 351
IDOT Job No. D-91-117-19   BDE Sequence No. 21444	
City/County Lockport/Will County	



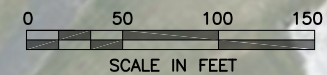
9/16/2022 IDOT\_WO#28\_20231026.dwg



**Legend**

- Soil Boring Location
- PESA Site Boundary
- PID** **pH** PID Exceeds background value or pH outside acceptable range for CCDD disposal

Depth	PID	pH
0-5'	0.0	8.70
0-3'	0.0	8.51
3-6'	0.0	7.96
0-3'	0.0	8.89
3-6'	0.0	10.41
0-5'	0.0	8.97
0-5'	0.0	8.5
5-11'	0.0	8.58
0-3'	0.0	8.93
3-6'	0.0	8.62
0-5'	0.0	7.76
5-11'	0.0	7.00
0-5'	0.0	8.99
5-10'	0.0	8.90
10-16'	0.0	8.25
0-2'	0.0	8.73
0-4'	5.4	8.75
4-8'	0.0	7.74
0-5'	0.0	8.39
5-10'	0.0	8.28
10-14'	0.0	8.20
0-5'	0.0	8.43
DUP-03	0-5'	0.0 8.22
	5-11'	0.0 8.35
0-3'	0.0	8.27
3-6'	0.0	8.96
0-5'	0.0	8.34
5-11'	0.0	7.82
DUP-01	5-11'	0.0 7.83
0-5'	0.0	8.16
5-10'	0.0	7.78
10-12'	0.0	7.51
0-5'	0.0	8.19
5-10'	0.0	8.53
10-15'	0.0	8.18
0-5'	0.0	8.95
5-10'	0.0	7.81
10-15'	0.0	8.08
0-4'	0.0	8.39
4-7'	0.0	8.25
0-4'	0.0	7.81
4-7'	0.0	7.88
0-4'	0.0	8.39
4-7'	0.0	8.25
0-4'	0.0	8.64
DUP-11	0-4'	0.0 8.96
	4-7'	0.0 8.73
0-5'	0.0	7.66
5-10'	0.0	8.70
10-14'	0.0	7.81
0-4'	0.0	8.33
4-7'	0.0	7.97
0-5'	0.0	9.19
5-11'	0.0	8.68
0-4'	0.0	8.76
4-8'	0.0	8.13
0-5'	0.0	8.72
5-9'	0.0	7.62
0-4'	0.0	8.51
4-7'	0.0	8.61
0-4'	0.0	8.28
4-7'	0.0	8.66
0-5'	0.0	8.05
5-10'	0.0	8.17
10-14'	0.0	7.90
DUP-12	10-14'	0.0 7.82
0-5'	0.0	8.34
5-10'	34.1	7.67
0-4'	0.0	8.33
4-7'	0.0	8.23
0-4'	0.0	7.94
4-7'	0.0	7.94
0-5'	0.0	7.95
DUP-13	0-5'	0.0 8.04
	5-11'	0.0 8.55
0-4'	0.0	8.38
DUP-14	0-4'	0.0 8.70
	4-7'	0.0 8.12
0-4'	0.0	8.70
4-7'	0.0	8.12
0-5'	0.0	8.67
5-9'	0.0	8.47
0-4'	0.0	7.35
4-7'	0.0	8.72
0-5'	0.0	8.16
5-9'	0.0	7.45

Location Legend

**Notes:**

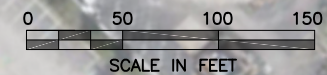
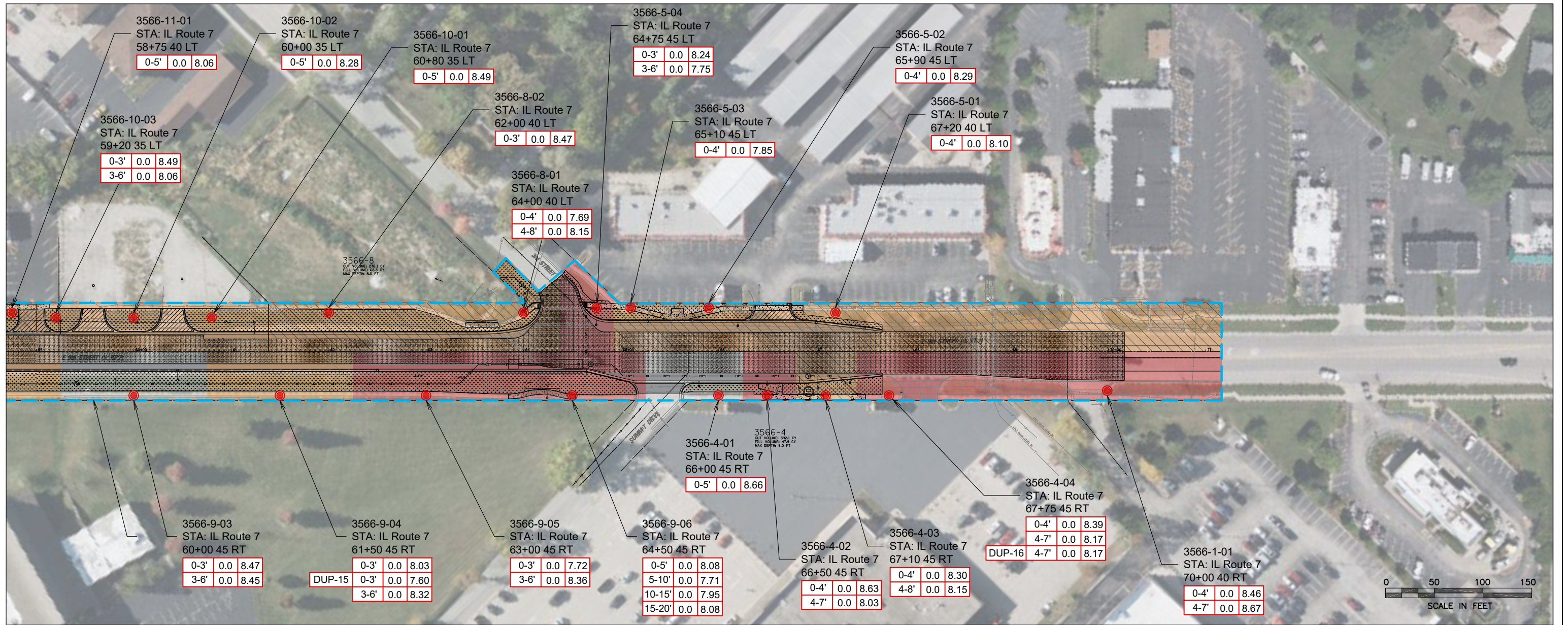
- Additional detail and information regarding regulated substances management and disposal classifications can be found in the Standard Specifications for Road and Bridge Construction (SSRBC) Section 669.05.
- This figure relies on color code depictions for soil management. Please contact the DESU or AE for assistance.

DESIGNED	NL
DRAWN	SCC
CHECKED	NL
APPROVED	
DATE	10/26/2023



WO No. 28	FIGURE 4-1b Regulated Substances Management Area
3030 WARRENVILLE RD LISLE, ILLINOIS 60532	Location: IL Route 7 (9th Street) Lockport, IL
PH (888) 405-1742	Contract
	PESA: 3566V   Route FAP 351
	IDOT Job No. D-91-117-19   BDE Sequence No. 21444
	City/County Lockport/Will County





Location Legend

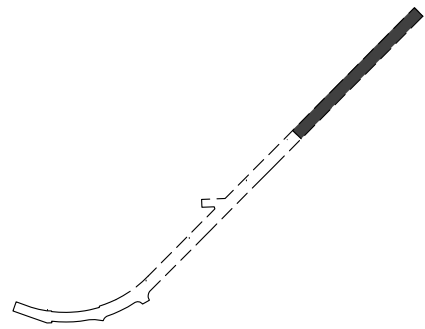
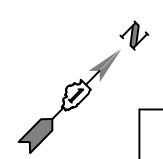
**Legend**

- Soil Boring Location
- PESA Site Boundary
- PID** **pH** PID Exceeds background value or pH outside acceptable range for CCDD disposal

Depth	PID	pH
669.05(a)(1)	669.05(a)(6)	669.05(b)(1)
669.05(a)(2)	669.05(a)(5)	669.05(b)(2)
669.05(a)(3)	669.05(a)(4)	669.05(c)
669.05(a)(4)	669.05(a)(3)	669.05(d)
669.05(a)(5)	669.05(a)(2)	WORK ZONE

**Notes:**

- Additional detail and information regarding regulated substances management and disposal classifications can be found in the Standard Specifications for Road and Bridge Construction (SSRBC) Section 669.05.
- This figure relies on color code depictions for soil management. Please contact the DESU or AE for assistance.



WO No. 28	FIGURE 4-1c Regulated Substances Management Area	
Location: IL Route 7 (9th Street) Lockport, IL		
Contract		
PESA: 3566V	Route	FAP 351
IDOT Job No. D-91-117-19   BDE Sequence No. 21444		
City/County Lockport/Will County		

DESIGNED	NL
DRAWN	SCC
CHECKED	NL
APPROVED	
DATE	10/26/2023



3030 WARRENVILLE RD  
LISLE, ILLINOIS  
60532  
PH (888) 405-1742

9/16/2022 IDOT\_WO#28\_20231026.dwg



## ACCESSIBLE PEDESTRIAN SIGNALS (APS) (BDE)

Effective: April 1, 2003

Revised: January 1, 2022

Description. This work shall consist of furnishing and installing accessible pedestrian signals (APS). Each APS shall consist of an interactive vibrotactile pedestrian pushbutton with speaker, an informational sign, a light emitting diode (LED) indicator light, a solid-state electronic control board, a power supply, wiring, and mounting hardware. The APS shall meet the requirements of the MUTCD and Sections 801 and 888 of the Standard Specifications, except as modified herein.

Electrical Requirements. The APS shall operate with systems providing 95 to 130 VAC, 60 Hz and throughout an ambient air temperature range of -29 to +160 °F (-34 to +70 °C).

The APS shall contain a power protection circuit consisting of both fuse and transient protection.

Audible Indications. A pushbutton locator tone shall sound at each pushbutton and shall be deactivated during the associated walk indication and when associated traffic signals are in flashing mode. Pushbutton locator tones shall have a duration of 0.15 seconds or less and shall repeat at 1-second intervals. Each actuation of the pushbutton shall be accompanied by the speech message "Wait".

If two accessible pedestrian pushbuttons are placed less than 10 ft (3 m) apart or placed on the same pole, the audible walk indication shall be a speech walk message. This message shall sound throughout the WALK interval only. The verbal message shall be modeled after: "Street Name. Walk Sign is on to cross "Street Name." For signalized intersections utilizing exclusive pedestrian phasing, the verbal message shall be "Walk sign is on for all crossings". In addition, a speech pushbutton information message shall be provided by actuating the APS pushbutton when the WALK interval is not timing. This verbal message shall be modeled after: "Wait. Wait to cross 'Street Name' at 'Street Name'".

Where two accessible pedestrian pushbuttons are separated by at least 10 ft (3 m), the walk indication shall be an audible percussive tone. It shall repeat at 8 to 10 ticks per second with a dominant frequency of 880 Hz.

Automatic volume adjustments in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA. Locator tone and verbal messages shall be no more than 5 dB louder than ambient sound.

At locations with railroad interconnection, an additional speech message stating "Walk time shortened when train approaches" shall be used after the speech walk message. At locations with emergency vehicle preemption, an additional speech message "Walk time shortened when emergency vehicle approaches" shall be used after the speech walk message.

Pedestrian Pushbutton. Pedestrian pushbuttons shall be at least 2 in. (50 mm) in diameter or width. The force required to activate the pushbutton shall be no greater than 3.5 lb (15.5 N).

A red LED shall be located on or near the pushbutton which, when activated, acknowledges the pedestrians request to cross the street.

Signage. A sign shall be located immediately above the pedestrian pushbutton and parallel to the crosswalk controlled by the pushbutton. The sign shall conform to one of the following standard MUTCD designs: R10-3, R10-3a, R10-3e, R10-3i, R10-4, and R10-4a.

Tactile Arrow. A tactile arrow, pointing in the direction of travel controlled by a pushbutton, shall be provided on the pushbutton.

Vibrotactile Feature. The pushbutton shall pulse when depressed and shall vibrate continuously throughout the WALK interval.

Method of Measurement. This work will be measured for payment as each, per pushbutton.

Basis of Payment. This work will be paid for at the contract unit price per each for ACCESSIBLE PEDESTRIAN SIGNALS.

80099

## 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  $\pm 2.0$  percent of the actual quantity of material delivered.”

80274

## BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE)

Effective: November 2, 2006

Revised: August 1, 2017

Description. Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract.

The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments that are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, joint filling/sealing, or extra work paid for at a lump sum price or by force account.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$$

Where: CA = Cost Adjustment, \$.

BPI<sub>P</sub> = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).

BPI<sub>L</sub> = Bituminous Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/ton (\$/metric ton).

%AC<sub>V</sub> = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC<sub>V</sub> will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC<sub>V</sub> and undiluted emulsified asphalt will be considered to be 65% AC<sub>V</sub>.

Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards:  $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$ . For HMA mixtures measured in square meters:  $Q, \text{ metric tons} = A \times D \times (G_{mb} \times 1) / 1000$ . When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different  $G_{mb}$  and % AC<sub>V</sub>.

For bituminous materials measured in gallons:  $Q, \text{ tons} = V \times 8.33 \text{ lb/gal} \times SG / 2000$

For bituminous materials measured in liters:  $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times SG / 1000$

Where: A = Area of the HMA mixture, sq yd (sq m).

D = Depth of the HMA mixture, in. (mm).

$G_{mb}$  = Average bulk specific gravity of the mixture, from the approved mix design.

V = Volume of the bituminous material, gal (L).  
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI<sub>L</sub> and BPI<sub>P</sub> in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(BPI_L - BPI_P) \div BPI_L\} \times 100$$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

80173

**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



## CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

Revised: November 1, 2014

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

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment’s respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 <sup>1/</sup>	600-749	2002
	750 and up	2006
June 1, 2011 <sup>2/</sup>	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 <sup>2/</sup>	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

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

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<http://www.epa.gov/cleandiesel/verification/verif-list.htm>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit

device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

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

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

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

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

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

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

### **Diesel Retrofit Deficiency Deduction**

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

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

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected.

Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

80261

## **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 23.00 % 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](mailto: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 it 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 or 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](mailto: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

## **HOT-MIX ASPHALT (BDE)**

Effective: January 1, 2024

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

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

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

“When establishing the target density, the HMA maximum theoretical specific gravity ( $G_{mm}$ ) will be the Department mix design verification test result.”

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

“Production is not required to stop after a test strip has been constructed.”

80456

## HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT (BDE)

Effective: November 1, 2022

Revised: August 1, 2023

Add the following after the second sentence in the eighth paragraph of Article 406.06(h)(2) of the Standard Specifications:

“If rain is forecasted and traffic is to be on the LJS or if pickup/tracking of the LJS material is likely, the LJS shall be covered immediately following its application with FA 20 fine aggregate mechanically spread uniformly at a rate of  $1.5 \pm 0.5$  lb/sq yd ( $0.75 \pm 0.25$  kg/sq m). Fine aggregate landing outside of the LJS shall be removed prior to application of tack coat.”

Add the following after the first sentence in the ninth paragraph of Article 406.06(h)(2) of the Standard Specifications:

“LJS half-width shall be applied at a width of  $9 \pm 1$  in. ( $225 \pm 25$  mm) in the immediate lane to be placed with the outside edge flush with the joint of the next HMA lift. The vertical face of any longitudinal joint remaining in place shall also be coated.”

Add the following after the eleventh paragraph of Article 406.06(h)(2) of the Standard Specifications:

“LJS Half-Width Application Rate, lb/ft (kg/m) <sup>1/</sup>			
Lift Thickness, in. (mm)	Coarse Graded Mixture (IL-19.0, IL-19.0L, IL-9.5, IL-9.5L, IL-4.75)	Fine Graded Mixture (IL-9.5FG)	SMA Mixture (SMA-9.5, SMA-12.5)
$\frac{3}{4}$ (19)	0.44 (0.66)		
1 (25)	0.58 (0.86)		
1 $\frac{1}{4}$ (32)	0.66 (0.98)	0.44 (0.66)	
1 $\frac{1}{2}$ (38)	0.74 (1.10)	0.48 (0.71)	0.63 (0.94)
1 $\frac{3}{4}$ (44)	0.82 (1.22)	0.52 (0.77)	0.69 (1.03)
2 (50)	0.90 (1.34)	0.56 (0.83)	0.76 (1.13)
$\geq 2 \frac{1}{4}$ (60)	0.98 (1.46)		

1/ The application rate includes a surface demand for liquid. The thickness of the LJS may taper from the center of the application to a lesser thickness on the edge of the application, provided the correct width and application rate are maintained.”

Revise the second paragraph of Article 406.13(b) of the Standard Specifications to read:

“Aggregate for covering tack, LJS, or FLS will not be measured for payment.”

Add the following to the end of the second paragraph of Article 406.14 of the Standard Specifications:

“Longitudinal joint sealant (LJS) half-width will be paid for at the contract unit price per foot (meter) for LONGITUDINAL JOINT SEALANT, HALF-WIDTH.”

80446



## PERFORMANCE GRADED ASPHALT BINDER (BDE)

Effective: January 1, 2023

Revise Article 1032.05 of the Standard Specifications to read:

**“1032.05 Performance Graded Asphalt Binder.** These materials will be accepted according to the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.” The Department will maintain a qualified producer list. These materials shall be free from water and shall not foam when heated to any temperature below the actual flash point. Air blown asphalt, recycle engine oil bottoms (ReOB), and polyphosphoric acid (PPA) modification shall not be used.

When requested, producers shall provide the Engineer with viscosity/temperature relationships for the performance graded asphalt binders delivered and incorporated in the work.

- (a) Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans and the following.

Test	Parameter
Small Strain Parameter (AASHTO PP 113) BBR, $\Delta T_c$ , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5 °C min.

- (b) Modified Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans.

Asphalt binder modification shall be performed at the source, as defined in the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.”

Modified asphalt binder shall be safe to handle at asphalt binder production and storage temperatures or HMA construction temperatures. Safety Data Sheets (SDS) shall be provided for all asphalt modifiers.

- (1) Polymer Modification (SB/SBS or SBR). Elastomers shall be added to the base asphalt binder to achieve the specified performance grade and shall be either a styrene-butadiene diblock, triblock copolymer without oil extension, or a styrene-butadiene rubber. The polymer modified asphalt binder shall be smooth, homogeneous, and be according to the requirements shown in Table 1 or 2 for the grade shown on the plans.

Table 1 - Requirements for Styrene-Butadiene Copolymer (SB/SBS) Modified Asphalt Binders		
Test	Asphalt Grade SB/SBS PG 64-28 SB/SBS PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SB/SBS PG 76-22 SB/SBS PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

Table 2 - Requirements for Styrene-Butadiene Rubber (SBR) Modified Asphalt Binders		
Test	Asphalt Grade SBR PG 64-28 SBR PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SBR PG 76-22 SBR PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
Toughness ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	110 (12.5) min.	110 (12.5) min.
Tenacity ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	75 (8.5) min.	75 (8.5) min.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	40 min.	50 min.

- (2) Ground Tire Rubber (GTR) Modification. GTR modification is the addition of recycled ground tire rubber to liquid asphalt binder to achieve the specified performance grade. GTR shall be produced from processing automobile and/or truck tires by the ambient

grinding method or micronizing through a cryogenic process. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall not contain free metal particles, moisture that would cause foaming of the asphalt, or other foreign materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois Modified AASHTO T 27 “Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates” or AASHTO PP 74 “Standard Practice for Determination of Size and Shape of Glass Beads Used in Traffic Markings by Means of Computerized Optical Method”, a 50 g sample of the GTR shall conform to the following gradation requirements.

Sieve Size	Percent Passing
No. 16 (1.18 mm)	100
No. 30 (600 µm)	95 ± 5
No. 50 (300 µm)	> 20

GTR modified asphalt binder shall be tested for rotational viscosity according to AASHTO T 316 using spindle S27. GTR modified asphalt binder shall be tested for original dynamic shear and RTFO dynamic shear according to AASHTO T 315 using a gap of 2 mm.

The GTR modified asphalt binder shall meet the requirements of Table 3.

Table 3 - Requirements for Ground Tire Rubber (GTR) Modified Asphalt Binders		
Test	Asphalt Grade GTR PG 64-28 GTR PG 70-22	Asphalt Grade GTR PG 76-22 GTR PG 76-28 GTR PG 70-28
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

- (3) Softener Modification (SM). Softener modification is the addition of organic compounds, such as engineered flux, bio-oil blends, modified vegetable oils, glycol amines, and fatty acid derivatives, to the base asphalt binder to achieve the specified performance grade. Softeners shall be dissolved, dispersed, or reacted in the asphalt binder to enhance its performance and shall remain compatible with the asphalt binder with no separation. Softeners shall not be added to modified PG asphalt binder as defined in Articles 1032.05(b)(1) or 1032.05(b)(2).

An Attenuated Total Reflectance-Fourier Transform Infrared spectrum (ATR-FTIR) shall be collected for both the softening compound as well as the softener modified

asphalt binder at the dose intended for qualification. The ATR-FTIR spectra shall be collected on unaged softener modified binder, 20-hour Pressurized Aging Vessel (PAV) aged softener modified binder, and 40-hour PAV aged softener modified binder. The ATR-FTIR shall be collected in accordance with Illinois Test Procedure 601. The electronic files spectral files (in one of the following extensions or equivalent: \*.SPA, \*.SPG, \*.IRD, \*.IFG, \*.CSV, \*.SP, \*.IRS, \*.GAML, \*. [0-9], \*.IGM, \*.ABS, \*.DRT, \*.SBM, \*.RAS) shall be submitted to the Central Bureau of Materials.

Softener modified asphalt binders shall meet the requirements in Table 4.

Test	Asphalt Grade	
	SM PG 46-28	SM PG 46-34
	SM PG 52-28	SM PG 52-34
	SM PG 58-22	SM PG 58-28
	SM PG 64-22	
Small Strain Parameter (AASHTO PP 113) BBR, $\Delta T_c$ , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5°C min.	
Large Strain Parameter (Illinois Modified AASHTO T 391) DSR/LAS Fatigue Property, $\Delta G^* _{peak}$ , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	≥ 54 %	

The following grades may be specified as tack coats.

Asphalt Grade	Use
PG 58-22, PG 58-28, PG 64-22	Tack Coat

Revise Article 1031.06(c)(1) and 1031.06(c)(2) of the Standard Specifications to read:

“(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin ABR shall not exceed the amounts listed in the following table.

Ndesign	Binder	Surface	Polymer Modified Binder or Surface <sup>3/</sup>
30	30	30	10
50	25	15	10
70	15	10	10
90	10	10	10

1/ For Low ESAL HMA shoulder and stabilized subbase, the RAP/RAS ABR shall not exceed 50 percent of the mixture.

- 2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).
  - 3/ The maximum ABR percentages for ground tire rubber (GTR) modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.
- (2) FRAP/RAS. When FRAP is used alone or FRAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the following table.

HMA Mixtures - FRAP/RAS Maximum ABR % <sup>1/2/</sup>			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface <sup>3/</sup>
30	55	45	15
50	45	40	15
70	45	35	15
90	45	35	15
SMA	--	--	25
IL-4.75	--	--	35

- 1/ For Low ESAL HMA shoulder and stabilized subbase, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.
- 2/ When FRAP/RAS ABR exceeds 20 percent for all mixes, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).
- 3/ The maximum ABR percentages for GTR modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.”

Add the following to the end of Note 2 of Article 1030.03 of the Standard Specifications.

“A dedicated storage tank for the ground tire rubber (GTR) modified asphalt binder shall be provided. This tank shall be capable of providing continuous mechanical mixing throughout and/or recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ±0.40 percent.”

## **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

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 (RSM DR)”.

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.

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.

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."

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 VOC GROUNDWATER ANALYSIS using EPA Method 8260B, SVOC 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."

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)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	40 (50)
1A Salt Tolerant Lawn Mixture 1/	Kentucky Bluegrass	60 (70)
	Perennial Ryegrass	20 (20)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	20 (20)
	<i>Festuca brevipilla</i> (Hard Fescue)	20 (20)
	<i>Puccinellia distans</i> (Fulfs 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)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	20 (20)
2 Roadside Mixture 1/	<i>Lolium arundinaceum</i> (Tall Fescue)	100 (110)
	Perennial Ryegrass	50 (55)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	40 (50)
	Red Top	10 (10)
2A Salt Tolerant Roadside Mixture 1/	<i>Lolium arundinaceum</i> (Tall Fescue)	60 (70)
	Perennial Ryegrass	20 (20)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	30 (20)
	<i>Festuca brevipila</i> (Hard Fescue)	30 (20)
	<i>Puccinellia distans</i> (Fulfs Saltgrass or Salty Alkaligrass)	60 (70)
3 Northern Illinois Slope Mixture 1/	<i>Elymus canadensis</i> (Canada Wild Rye) 5/	5 (5)
	Perennial Ryegrass	20 (20)
	Alsike Clover 4/	5 (5)
	<i>Desmanthus illinoensis</i> (Illinois Bundleflower) 4/ 5/	2 (2)
	<i>Schizachyrium scoparium</i> (Little Bluestem) 5/	12 (12)
	<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/	10 (10)
	<i>Puccinellia distans</i> (Fulfs 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
<i>Elymus canadensis</i> (Canada Wild Rye) 5/		20 (20)
<i>Panicum virgatum</i> (Switchgrass) 5/		10 (10)
<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/		12 (12)
<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/		10 (10)
<i>Dalea candida</i> (White Prairie Clover) 4/ 5/		5 (5)
<i>Rudbeckia hirta</i> (Black-Eyed Susan) 5/		5 (5)
Oats, Spring		50 (55)

Class – Type	Seeds	lb/acre (kg/hectare)
4 Native Grass 2/ 6/	<i>Andropogon gerardi</i> (Big Blue Stem) 5/	4 (4)
	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/	5 (5)
	<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/	5 (5)
	<i>Elymus canadensis</i> (Canada Wild Rye) 5/	1 (1)
	<i>Panicum virgatum</i> (Switch Grass) 5/	1 (1)
	<i>Sorghastrum nutans</i> (Indian Grass) 5/	2 (2)
	Annual Ryegrass	25 (25)
	Oats, Spring	25 (25)
	Perennial Ryegrass	15 (15)
	4A Low Profile Native Grass 2/ 6/	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/
<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/		5 (5)
<i>Elymus canadensis</i> (Canada Wild Rye) 5/		1 (1)
<i>Sporobolus heterolepis</i> (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)
<u>Species:</u>		<u>% By Weight</u>
<i>Calamagrostis canadensis</i> (Blue Joint Grass)		12
<i>Carex lacustris</i> (Lake-Bank Sedge)		6
<i>Carex slipata</i> (Awl-Fruited Sedge)		6
<i>Carex stricta</i> (Tussock Sedge)		6
<i>Carex vulpinoidea</i> (Fox Sedge)		6
<i>Eleocharis acicularis</i> (Needle Spike Rush)		3
<i>Eleocharis obtusa</i> (Blunt Spike Rush)		3
<i>Glyceria striata</i> (Fowl Manna Grass)		14
<i>Juncus effusus</i> (Common Rush)		6
<i>Juncus tenuis</i> (Slender Rush)		6
<i>Juncus torreyi</i> (Torrey's Rush)		6
<i>Leersia oryzoides</i> (Rice Cut Grass)		10
<i>Scirpus acutus</i> (Hard-Stemmed Bulrush)		3
<i>Scirpus atrovirens</i> (Dark Green Rush)		3
<i>Bolboschoenus fluviatilis</i> (River Bulrush)		3
<i>Schoenoplectus tabernaemontani</i> (Softstem Bulrush)		3
<i>Spartina pectinata</i> (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:	
	<i>Coreopsis lanceolata</i> (Sand Coreopsis) <i>Leucanthemum maximum</i> (Shasta Daisy) <i>Gaillardia pulchella</i> (Blanket Flower) <i>Ratibida columnifera</i> (Prairie Coneflower) <i>Rudbeckia hirta</i> (Black-Eyed Susan)	
	Forb Mixture - Mixture not exceeding 5 % by weight PLS of any one species, of the following:	
	<i>Amorpha canescens</i> (Lead Plant) 4/ <i>Anemone cylindrica</i> (Thimble Weed) <i>Asclepias tuberosa</i> (Butterfly Weed) <i>Aster azureus</i> (Sky Blue Aster) <i>Symphotrichum leave</i> (Smooth Aster) <i>Aster novae-angliae</i> (New England Aster) <i>Baptisia leucantha</i> (White Wild Indigo) 4/ <i>Coreopsis palmata</i> (Prairie Coreopsis) <i>Echinacea pallida</i> (Pale Purple Coneflower) <i>Eryngium yuccifolium</i> (Rattlesnake Master) <i>Helianthus mollis</i> (Downy Sunflower) <i>Heliopsis helianthoides</i> (Ox-Eye) <i>Liatris aspera</i> (Rough Blazing Star) <i>Liatris pycnostachya</i> (Prairie Blazing Star) <i>Monarda fistulosa</i> (Prairie Bergamot) <i>Parthenium integrifolium</i> (Wild Quinine) <i>Dalea candida</i> (White Prairie Clover) 4/ <i>Dalea purpurea</i> (Purple Prairie Clover) 4/ <i>Physostegia virginiana</i> (False Dragonhead) <i>Potentilla arguta</i> (Prairie Cinquefoil) <i>Ratibida pinnata</i> (Yellow Coneflower) <i>Rudbeckia subtomentosa</i> (Fragrant Coneflower) <i>Silphium laciniatum</i> (Compass Plant) <i>Silphium terebinthinaceum</i> (Prairie Dock) <i>Oligoneuron rigidum</i> (Rigid Goldenrod) <i>Tradescantia ohiensis</i> (Spiderwort) <i>Veronicastrum virginicum</i> (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)
	<u>Species:</u>	<u>% By Weight</u>
	<i>Aster novae-angliae</i> (New England Aster)	5
	<i>Echinacea pallida</i> (Pale Purple Coneflower)	10
	<i>Helianthus mollis</i> (Downy Sunflower)	10
	<i>Heliopsis helianthoides</i> (Ox-Eye)	10
	<i>Liatris pycnostachya</i> (Prairie Blazing Star)	10
	<i>Ratibida pinnata</i> (Yellow Coneflower)	5
	<i>Rudbeckia hirta</i> (Black-Eyed Susan)	10
	<i>Silphium laciniatum</i> (Compass Plant)	10
	<i>Silphium terebinthinaceum</i> (Prairie Dock)	20
	<i>Oligoneuron rigidum</i> (Rigid Goldenrod)	10
5B Wetland Forb 2/ 5/ 6/	Forb Mixture (see below)	2 (2)
	<u>Species:</u>	<u>% By Weight</u>
	<i>Acorus calamus</i> (Sweet Flag)	3
	<i>Angelica atropurpurea</i> (Angelica)	6
	<i>Asclepias incarnata</i> (Swamp Milkweed)	2
	<i>Aster puniceus</i> (Purple Stemmed Aster)	10
	<i>Bidens cernua</i> (Beggarticks)	7
	<i>Eutrochium maculatum</i> (Spotted Joe Pye Weed)	7
	<i>Eupatorium perfoliatum</i> (Boneset)	7
	<i>Helenium autumnale</i> (Autumn Sneezeweed)	2
	<i>Iris virginica shrevei</i> (Blue Flag Iris)	2
	<i>Lobelia cardinalis</i> (Cardinal Flower)	5
	<i>Lobelia siphilitica</i> (Great Blue Lobelia)	5
	<i>Lythrum alatum</i> (Winged Loosestrife)	2
	<i>Physostegia virginiana</i> (False Dragonhead)	5
	<i>Persicaria pensylvanica</i> (Pennsylvania Smartweed)	10
	<i>Persicaria lapathifolia</i> (Curlytop Knotweed)	10
	<i>Pycnanthemum virginianum</i> (Mountain Mint)	5
	<i>Rudbeckia laciniata</i> (Cut-leaf Coneflower)	5
	<i>Oligoneuron riddellii</i> (Riddell Goldenrod)	2
	<i>Sparganium eurycarpum</i> (Giant Burreed)	5
6 Conservation Mixture 2/ 6/	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/ <i>Elymus canadensis</i> (Canada Wild Rye) 5/ Buffalo Grass 5/ 7/ Vernal Alfalfa 4/ Oats, Spring	5 (5) 2 (2) 5 (5) 15 (15) 48 (55)
6A Salt Tolerant Conservation Mixture 2/ 6/	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/ <i>Elymus canadensis</i> (Canada Wild Rye) 5/ Buffalo Grass 5/ 7/ Vernal Alfalfa 4/ Oats, Spring <i>Puccinellia distans</i> (Fults Saltgrass or Salty Alkaligrass)	5 (5) 2 (2) 5 (5) 15 (15) 48 (55) 20 (20)
7 Temporary Turf Cover Mixture	Perennial Ryegrass Oats, Spring	50 (55) 64 (70)

Notes:

- 1/ Seeding shall be performed when the ambient temperature has been between 45 °F (7 °C) and 80 °F (27 °C) 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 °F (7 °C) for a minimum of seven (7) consecutive days and ending when the ambient temperature exceeds 80 °F (27 °C) 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  $\text{KNO}_3$  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

## **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 15<sup>th</sup> 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 3. 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

## MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES

Effective: October 4, 2016

Revised: March 1, 2019

**Description.** This work shall consist of furnishing and placing a membrane waterproofing system on the top slab and sidewalls, or portions thereof, for buried structures as detailed on the contract plans.

All membrane waterproofing systems shall be supplied by qualified producers. The Department will maintain a list of qualified producers.

**Materials.** The materials used in the waterproofing system shall consist of the following.

- (a) Cold-applied, self-adhering rubberized asphalt/polyethylene membrane sheet with the following properties:

<b>Physical Properties</b>	
Thickness ASTM D 1777 or D 3767	60 mils (1.500 mm) min.
Width	36 inches (914 mm) min.
Tensile Strength, Film ASTM D 882	5000 lb./in <sup>2</sup> (34.5 MPa) min.
Pliability [180° bend over 1" inch (25 mm) mandrel @ -20 °F (-29 °C)] ASTM D 146 (Modified) or D1970	No Effect
Puncture Resistance-Membrane ASTM E 154	40 lb. (178 N) min.
Permeability (Perms) ASTM E 96, Method B	0.1 max.
Water Absorption (% by Weight) ASTM D 570	0.2 max.
Peel Strength ASTM D 903	9 lb./in (1576 N/m) min.

- (b) Ancillary Materials: Adhesives, Conditioners, Primers, Mastic, Two-Part Liquid Membranes, and Sealing Tapes as required by the manufacturer of the membrane and film for use with the respective membrane waterproofing system.

**Construction.** The areas requiring waterproofing shall be prepared and the waterproofing shall be installed in accordance with the manufacturer's instructions. The Contractor shall not install any part of a membrane waterproofing system in wet conditions, or if the ambient or concrete surface temperature is below 40° (4° C), unless allowed by the Engineer.

Surfaces to be waterproofed shall be smooth and free from projections which might damage the membrane sheet. Projections or depressions on the surface that may cause damage to the membrane shall be removed or filled as directed by the Engineer. The surface shall be power washed and cleaned of dust, dirt, grease, and loose particles, and shall be dry before the waterproofing is applied.

The Contractor shall uniformly apply primer to the entire area to be waterproofed, at the rate stated in the manufacturer's instructions, by brush, or roller. The Contractor shall brush out primer that tends to puddle in low spots to allow complete drying. The primer shall be cured according to the manufacturer's instructions. Primed areas shall not stand uncovered overnight. If membrane sheets are not placed over primer within the time recommended by the manufacturer, the Contractor shall recoat the surfaces at no additional cost to the Department.

The installation of the membrane sheet to primed surfaces shall be such that all joints are shingled to shed water by commencing from the lowest elevation of the buried structure's top slab and progress towards the highest elevation. The membrane sheets shall be overlapped as required by the manufacturer. The Contractor shall seal with mastic any laps that were not thoroughly sealed. The membrane shall be smooth and free of wrinkles and there shall be no depressions in horizontal surfaces of the finished waterproofing. After placement, exposed edges of membrane sheets shall be sealed with a troweled bead of a manufacturer's recommended mastic, or two-part liquid membrane, or with sealing tape.

Sealing bands at joints between precast segments shall be installed prior to the waterproofing system being applied. Where the waterproofing system and sealing band overlap, the installation shall be planned such that water will not be trapped or directed underneath the membrane or sealing band.

Care shall be taken to protect and to prevent damage to the waterproofing system prior to and during backfilling operations. The waterproofing system shall be removed as required for the installation of slab mounted guardrails and other appurtenances. After the installation is complete, the system shall be repaired and sealed against water intrusion according to the manufacturer's instructions and to the satisfaction of the Engineer.

Replace the last paragraph of Article 540.06 Precast Concrete Box Culverts and replace with:

Handling holes shall be filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation nor project above the outside surface to the extent that may cause damage to the membrane. When metal lifting inserts are used, their sockets shall be filled with mastic or mortar compatible with the membrane.

Method of Measurement. The waterproofing system will be measured in place, in square yards (square meters) of the concrete surface to be waterproofed.

Basis of Payment. This work will be paid for at the contract unit price, per square yard (square meter) for MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES.

**REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

**ATTACHMENTS**

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

**I. GENERAL**

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

**II. NONDISCRIMINATION** (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

#### **6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

#### **8. Reasonable Accommodation for Applicants /**

**Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

#### **9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:**

The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

#### **10. Assurances Required:**

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA- 1273 format and FHWA program requirements.

#### 1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act ([29 CFR part 3](#))), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;



(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to [DBAconformance@dol.gov](mailto: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](mailto: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 procurement 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/WHDLegacy/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 procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

**4. Subcontracts.** The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

**5. Anti-retaliation.** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

### VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;

- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

## **VII. SAFETY: ACCIDENT PREVENTION**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and

health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

## **VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

**IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)**

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

**X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

**1. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

\* \* \* \* \*

**2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

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**3. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily



excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

\* \* \* \* \*

**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.

\* \* \* \* \*

**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.