

# 145

Letting January 18, 2019

## Notice to Bidders, Specifications and Proposal



**Contract No. 61F00  
COOK County  
Section 15-00119-00-PV (Schaumburg)  
Route FAU 1103 (State & National Parkway)  
Project C5MK-334 ()  
District 1 Construction Funds**

Prepared by

Checked by

F

(Printed by authority of the State of Illinois)



## NOTICE TO BIDDERS

- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 10:00 a.m. January 18, 2019 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. 61F00  
COOK County  
Section 15-00119-00-PV (Schaumburg)  
Project C5MK-334 ()  
Route FAU 1103 (State & National Parkway)  
District 1 Construction Funds**

**Roadway reconstruction with drainage and lighting work on State and National Parkway from Plum Grove Road to IL Route 58 in Schaumburg.**

- 3. INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.  
  
(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.
- 4. AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the  
Illinois Department of Transportation

Randall S. Blankenhorn,  
Secretary

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FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2019

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 4-1-16) (Revised 1-1-19)

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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>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80099		Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2014
80274		Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
80192		Automated Flagger Assistance Device	Jan. 1, 2008	
80173	270	X Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80241		Bridge Demolition Debris	July 1, 2009	
50261		Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50481		Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50491		Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50531		Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
* 80404		Coarse Aggregate Quality for Micro-Surfacing and Cape Seals	Jan. 1, 2019	
80384	272	X Compensable Delay Costs	June 2, 2017	
80198		Completion Date (via calendar days)	April 1, 2008	
80199		Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80293		Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
80311	276	X Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
80277		Concrete Mix Design – Department Provided	Jan. 1, 2012	April 1, 2016
80261	278	X Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
80387		Contrast Preformed Plastic Pavement Marking	Nov. 1, 2017	
* 80029	281	X Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Jan 2, 2019
80402	292	X Disposal Fees	Nov. 1, 2018	
80378		Dowel Bar Inserter	Jan. 1, 2017	Jan. 1, 2018
* 80405		Elastomeric Bearings	Jan. 1, 2019	
80388	294	X Equipment Parking and Storage	Nov. 1, 2017	
80229	295	X Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
80304		Grooving for Recessed Pavement Markings	Nov. 1, 2012	Nov. 1, 2017
80246	298	X Hot-Mix Asphalt – Density Testing of Longitudinal Joints	Jan. 1, 2010	Aug. 1, 2018
* 80406		Hot-Mix Asphalt – Mixture Design Verification and Production (Modified for I-FIT Projects)	Jan. 1, 2019	
* 80398	300	X Hot-Mix Asphalt – Longitudinal Joint Sealant	Aug. 1, 2018	Jan. 1, 2019
80399	304	X Hot-Mix Asphalt – Oscillatory Roller	Aug. 1, 2018	Nov. 1, 2018
80347		Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Nov. 1, 2014	Aug. 1, 2018
* 80383		Hot-Mix Asphalt – Quality Control for Performance	April 1, 2017	Jan. 1, 2019
80376	306	X Hot-Mix Asphalt – Tack Coat	Nov. 1, 2016	
80392	307	X Lights on Barricades	Jan. 1, 2018	
80336		Longitudinal Joint and Crack Patching	April 1, 2014	April 1, 2016
* 80393	309	X Manholes, Valve Vaults, and Flat Slab Tops	Jan. 1, 2018	Jan. 1, 2019
80400		Mast Arm Assembly and Pole	Aug. 1, 2018	
80045		Material Transfer Device	June 15, 1999	Aug. 1, 2014
80394		Metal Flared End Section for Pipe Culverts	Jan. 1, 2018	April 1, 2018
80165		Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
80349		Pavement Marking Blackout Tape	Nov. 1, 2014	April 1, 2016
80371	311	X Pavement Marking Removal	July 1, 2016	
80390	312	X Payments to Subcontractors	Nov. 2, 2017	
80389	313	X Portland Cement Concrete	Nov. 1, 2017	
80359		Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Nov. 1, 2017
80401		Portland Cement Concrete Pavement Connector for Bridge Approach Slab	Aug. 1, 2018	

<u>File Name</u>	<u>Pg.</u>		<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80300			Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
80328	314	X	Progress Payments	Nov. 2, 2013	
34261			Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
80157			Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
* 80306			Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 1, 2019
* 80407			Removal and Disposal of Regulated Substances	Jan. 1, 2019	
80395			Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
80340			Speed Display Trailer	April 2, 2014	Jan. 1, 2017
80127	315	X	Steel Cost Adjustment	April 2, 2014	Aug. 1, 2017
* 80408			Steel Plate Beam Guardrail Manufacturing	Jan. 1, 2019	
80397	318	X	Subcontractor and DBE Payment Reporting	April 2, 2018	
80391	319	X	Subcontractor Mobilization Payments	Nov. 2, 2017	
80317			Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	April 1, 2016
80298	320	X	Temporary Pavement Marking	April 1, 2012	April 1, 2017
20338	323	X	Training Special Provision	Oct. 15, 1975	
80403			Traffic Barrier Terminal, Type 1 Special	Nov. 1, 2018	
* 80409	326	X	Traffic Control Devices – Cones	Jan. 1, 2019	
* 80410			Traffic Spotters	Jan. 1, 2019	
80318	327	X	Traversable Pipe Grate for Concrete End Sections	Jan. 1, 2013	Jan. 1, 2018
80288	329	X	Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
80302	331	X	Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
80071			Working Days	Jan. 1, 2002	

The following special provisions are in the 2019 Supplemental Specifications and Recurring Special Provisions.

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
80382	Adjusting Frames and Grates	Articles 602.02(s) and (t), 1043.04, and 1043.05	April 1, 2017	
80366	Butt Joints	Article 406.08(c)	July 1, 2016	
80386	Calcium Aluminate Cement for Class PP-5 Concrete Patching	Article 1001.01(e)	Nov. 1, 2017	
80396	Class A and B Patching	Articles 442.06(a)(1) and (2)	Jan. 1, 2018	Nov. 1, 2018
80377	Portable Changeable Message Signs	Articles 701.20(h) and 1106.02(i)	Nov. 1, 2016	April 1, 2017
80385	Portland Cement Concrete Sidewalk	Article 424.12	Aug. 1, 2017	

## GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET

Effective as of the: June 15, 2018 Letting

<u>Pg #</u>	<u>√</u>	<u>File Name</u>	<u>Title</u>	<u>Effective</u>	<u>Revised</u>
		GBSP 4	Polymer Modified Portland Cement Mortar	June 7, 1994	Apr 1, 2016
		GBSP 12	Drainage System	June 10, 1994	Jun 24, 2015
		GBSP 13	High-Load Multi-Rotational Bearings	Oct 13, 1988	Apr 1, 2016
		GBSP 14	Jack and Remove Existing Bearings	April 20, 1994	April 13, 2018
		GBSP 15	Three Sided Precast Concrete Structure	July 12, 1994	Dec 21, 2016
		GBSP 16	Jacking Existing Superstructure	Jan 11, 1993	April 13, 2018
		GBSP 17	Bonded Preformed Joint Seal	July 12, 1994	Jan 1, 2007
		GBSP 18	Modular Expansion Joint	May 19, 1994	Dec 29, 2014
		GBSP 21	Cleaning and Painting Contact Surface Areas of Existing Steel Structures	June 30, 2003	April 13, 2018
		GBSP 25	Cleaning and Painting Existing Steel Structures	Oct 2, 2001	Apr 22, 2016
		GBSP 26	Containment and Disposal of Lead Paint Cleaning Residues	Oct 2, 2001	Apr 22, 2016
		GBSP 28	Deck Slab Repair	May 15, 1995	April 13, 2018
		GBSP 29	Bridge Deck Microsilica Concrete Overlay	May 15, 1995	Oct 20, 2017
		GBSP 30	Bridge Deck Latex Concrete Overlay	May 15, 1995	Oct 20, 2017
		GBSP 31	Bridge Deck High-Reactivity Metakaolin (HRM) Conc Overlay	Jan 21, 2000	Oct 20, 2017
		GBSP 33	Pedestrian Truss Superstructure	Jan 13, 1998	Dec 29, 2014
		GBSP 34	Concrete Wearing Surface	June 23, 1994	Oct 4, 2016
		GBSP 35	Silicone Bridge Joint Sealer	Aug 1, 1995	Oct 15, 2011
		GBSP 45	Bridge Deck Thin Polymer Overlay	May 7, 1997	Feb 6, 2013
		GBSP 51	Pipe Underdrain for Structures	May 17, 2000	Jan 22, 2010
332	X	GBSP 53	Structural Repair of Concrete	Mar 15, 2006	Apr 1, 2016
		GBSP 55	Erection of Curved Steel Structures	June 1, 2007	
		GBSP 56	Setting Piles in Rock	Nov 14, 1996	Apr 1, 2016
		GBSP 59	Diamond Grinding and Surface Testing Bridge Sections	Dec 6, 2004	Mar 29, 2017
		GBSP 60	Containment and Disposal of Non-Lead Paint Cleaning Residues	Nov 25, 2004	Apr 22, 2016
		GBSP 61	Slipform Parapet	June 1, 2007	Apr 22, 2016
		GBSP 67	Structural Assessment Reports for Contractor's Means and Methods	Mar 6, 2009	Oct 5, 2015
		GBSP 71	Aggregate Column Ground Improvement	Jan 15, 2009	Oct 15, 2011
		GBSP 72	Bridge Deck Fly Ash or GGBF Slag Concrete Overlay	Jan 18, 2011	Oct 20, 2017
		GBSP 75	Bond Breaker for Prestressed Concrete Bulb-T Beams	April 19, 2012	
		GBSP 77	Weep Hole Drains for Abutments, Wingwalls, Retaining Walls And Culverts	April 19, 2012	Oct 22, 2013
		GBSP 78	Bridge Deck Construction	Oct 22, 2013	Dec 21, 2016
		GBSP 79	Bridge Deck Grooving (Longitudinal)	Dec 29, 2014	Mar 29, 2017
		GBSP 81	Membrane Waterproofing for Buried Structures	Oct 4, 2016	April 13, 2018
		GBSP 82	Metallizing of Structural Steel	Oct 4, 2016	Oct 20, 2017
		GBSP 83	Hot Dip Galvanizing for Structural Steel	Oct 4, 2016	Oct 20, 2017
		GBSP 85	Micropiles	Apr 19, 1996	Oct 5, 2015
		GBSP 86	Drilled Shafts	Oct 5, 2015	Oct 4, 2016
		GBSP 87	Lightweight Cellular Concrete Fill	Nov 11, 2011	Apr 1, 2016
		GBSP 88	Corrugated Structural Plate Structures	Apr 22, 2016	April 13, 2018
		GBSP 89	Preformed Pavement Joint Seal	Oct 4, 2016	
		GBSP 90	Three Sided Precast Concrete Structure (Special)	Dec 21, 2016	April 13, 2018
		GBSP 91	Crosshole Sonic Logging Testing of Drilled Shafts	Apr 20, 2016	
		GBSP 92	Thermal Integrity Profile Testing of Drilled Shafts	Apr 20, 2016	

<u>Pg #</u>	<u>√</u>	<u>File Name</u>	<u>Title</u>	<u>Effective</u>	<u>Revised</u>
		GBSP 93	Preformed Bridge Joint Seal	Dec 21, 2016	April 13, 2018
		GBSP 94	Warranty for Cleaning and Painting Steel Structures	Mar 3, 2000	Nov 24, 2004
		GBSP 95	Bituminous Coated Aggregate Slopewall	Mar 21, 1997	Mar 19, 2018

LIST ANY ADDITIONAL SPECIAL PROVISIONS BELOW


The following Guide Bridge Special Provisions have been incorporated into the 2016 Standard Specifications:

File Name	Title	Std Spec Location
GBSP32	Temporary Sheet Piling	522
GBSP38	Mechanically Stabilized Earth Retaining Walls	522
GBSP42	Drilled Soldier Pile Retaining Wall	522
GBSP43	Driven Soldier Pile Retaining Wall	522
GBSP44	Temporary Soil Retention System	522
GBSP46	Geotextile Retaining Walls	522
GBSP57	Temporary Mechanically Stabilized Earth Retaining Walls	522
GBSP62	Concrete Deck Beams	504
GBSP64	Segmental Concrete Block Wall	522
GBSP65	Precast Modular Retaining Wall	522
GBSP73	Cofferdams	2017 Supp
GBSP74	Permanent Steel Sheet Piling (LRFD)	522
GBSP76	Granular Backfill for Structures	2017 Supp
GBSP80	Fabric Reinforced Elastomeric	1028
GBSP84	Precast, Prestressed Concrete Beams	2017 Supp

The following Guide Bridge Special Provisions have been discontinued or have been superseded:

File Name	Title	Disposition:
GBSP70	Braced Excavation	Use TSRS per Sec 522
GBSP95	Bridge Deck Concrete Sealer	Use July 1, 2012 version for Repair projects only



**STATE OF ILLINOIS**

**SPECIAL PROVISIONS**

The following Special Provisions supplement the “Standard Specifications for Road and Bridge Construction”, adopted April 1, 2016 (hereinafter referred to as the “Standard Specifications”); the latest edition of the “Manual on Uniform Traffic Control Devices for Streets and Highways” (MUTCD); the “Manual of Test Procedures for Materials” in effect on the date of invitation for bids; and the “Supplemental Specifications and Recurring Special Provisions”, adopted January 1, 2019, indicated on the Check Sheet included here in which apply to and govern the construction of FAU 1103 (State and National Parkway), Section 15-00119-00-PV, Project No. C5MK(334), Contract No. 61F00, and in case of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and shall govern.

**LOCATION OF PROJECT**

This project is located in the Village of Schaumburg, Cook County. The project limits are on State and National Parkway from 450’ east of Plum Grove Road to IL Route 58 (Golf Road). The project has a total gross and net length of 3,464.17 feet (0.66 miles).

**DESCRIPTION OF PROJECT**

The work consists of earth excavation, pavement removal, construction of storm sewers, HMA binder and surface course, combination concrete curb and gutter, street lighting, storm sewer, tree removal, landscaping, erosion control, thermoplastic pavement markings, sodding, and all incidental and collateral work necessary to complete the project as shown on the plans and as described herein.

**COMPLETION DATE PLUS WORKING DAYS**

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

The Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on November 29, 2019 except as specified herein.

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

Article 108.09 shall apply to both the Completion Date and the number of Working Days.

## **WORK RESTRICTIONS**

The Contractor shall not be allowed to restrict northbound National Parkway traffic or westbound State Parkway traffic using the detour shown in the plans until after the proposed roundabout at the intersection of Plum Grove Road and State Parkway being constructed under Contract 61E16 has been opened to traffic. Contract 61E16 includes an interim completion date of July 26, 2019 for completion of the roundabout.

## **US ARMY CORPS OF ENGINEERS SECTION 404 PERMIT**

This project requires a US Army Corps of Engineers (USACE) 404 permit that will be secured by the Village. As a condition of this permit, the Contractor will need to submit an in-stream work plan to the Engineer, Village, and North Cook County Soil and Water Conservation District for approval. Guidelines on acceptable in-stream work techniques can be found on the USACE website. The USACE defines and determines in-stream work. Work within the median ditches will need to be performed under dry conditions. The cost of all materials and labor necessary to comply with the above provisions to prepare and implement an in-stream work plan will not be paid for separately, but shall be considered as included in the unit bid prices of the contract and no additional compensation will be allowed.

## **PUBLIC CONVENIENCE AND SAFETY (DIST 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.”

**MAINTENANCE OF ROADWAYS**

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

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

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

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

Effective: June 1, 2016

Utility companies and/or municipal owners located within the construction limits of this project have provided the following information in regard to 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 in the action column; 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>ACTION</b>
Tower Road Crossing at 104+92	Buried Telephone	Existing telephone line is in conflict with proposed road excavation	AT&T	AT&T to relocate line <u>15</u> days
Tower Road Crossing at 105+04	Buried Electric	Existing electric line is in conflict with proposed road excavation	ComEd	ComEd to relocate line <u>4</u> days
State Pkwy Crossing at 23+00	Buried Cable TV	Existing cable is shallow and in conflict with proposed curb and gutter, pavement, and storm sewer	Comcast	Comcast to relocate line <u>21</u> days
Tower Rd 104+80, 40' LT	Buried Fiber Optic Cable	Existing fiber optic cable is in conflict with a proposed catch basin	Centurylink	Centurylink to relocate lines <u>45</u> days
Remington Rd 304+72, 28' LT	Buried Fiber Optic Cable	Existing fiber optic cable is in conflict with proposed storm sewer	Centurylink	
National Pkwy 40+87, 48' LT	Buried Fiber Optic Cable	Existing fiber optic cable is shallow and will be on conflict with proposed subgrade	Centurylink	
State Pkwy 43+45, 51' LT	Buried Fiber Optic Cable	Existing fiber optic cable is in conflict with proposed fire hydrant	Centurylink	

State Pkwy Payne Rd Tower Rd Remington Road	Existing Gas Main	Existing gas main in conflict with proposed improvements, will replace main prior to construction (plans by HBK Engineering)	Nicor	Nicor to relocate gas main <u>60</u> days
State Pkwy 27+15, 10' RT	Buried Fiber Optic	Expose and adjust existing W.S. fiber during installation of 6" PVC sanitary	Windstream	<u>1</u> days Total Installation

**Pre-Stage: 15 Days Total Installation for AT&T**  
**Pre-Stage: 4 Days Total Installation for ComEd**  
**Pre-Stage: 21 Days Total Installation for Comcast**  
**Pre-Stage: 45 Days Total Installation for Centurylink**  
**Pre-Stage: 60 Days Total Installation for Nicor**  
**Pre-Stage: 1 Day Total Installation for Windstream**  
**Pre-Stage Total: 146 Days**

Stage 1

STAGE/ LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
State Pkwy 31+04, 52' RT	Adjust during construction	Adjust handhole to proposed grade	Verizon Wireless & Meade Electric	Meade to adjust <u>1</u> day
State Pkwy 36+85, 51' RT	Adjust during construction	Adjust handhole to proposed grade	Verizon Wireless & Meade Electric	Meade to adjust <u>1</u> day
State Pkwy 30+95, 53' RT	Fiber Optic Handhole	Existing fiber optic handhole will be in conflict with proposed sidewalk; Vinakom to relocate	Vinakom	Vinakom to relocate <u>1</u> day

State Pkwy 23+46, 9' RT	Adjustment during construction	Expose and adjust existing W.S. fiber during installation of 8' DIA MH (23+46, 9' RT)	Windstream	Windstream to adjust <u>1</u> day
State Pkwy 23+59, 9' RT	Adjustment during construction	Expose and adjust existing W.S. fiber during installation of 12" water main (23+59, 9' RT)	Windstream	Windstream to adjust <u>1</u> day
State Pkwy 24+10, 10' RT	Adjustment during construction	Expose and adjust existing W.S. fiber during installation of 42" Storm (24+10, 10' RT)	Windstream	Windstream to adjust <u>1</u> day

**Stage 1: 2 Days Total Installation for Meade Electric**  
**Stage 1: 1 Day Total Installation for Vinakom**  
**Stage 1: 3 Days Total Installation for Windstream**  
**Stage 1 Total: 6 Days**

Stage 2

STAGE/ LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
State Pkwy 30+77, 59' LT	Adjust during construction	Adjust handhole to proposed grade	AT&T	AT&T to adjust <u>1</u> day
State Pkwy 33+27, 53' LT	Adjust during construction	Adjust handhole to proposed grade	AT&T	AT&T to adjust <u>1</u> day
State Pkwy 43+04, 57' LT	Adjust during construction	Adjust handhole to proposed grade	AT&T	AT&T to adjust <u>1</u> day
State Pkwy 29+65, 54' LT	Adjust during construction	Adjust handhole to proposed grade	Centurylink	Centurylink to adjust <u>1</u> day
State Pkwy 39+72, 59' LT	Adjust during construction	Adjust handhole to proposed grade	WOW!	WOW to adjust <u>1</u> day

Crossing Tower Rd 105+85	Adjust during construction	Expose and adjust existing W.S. fiber during installation of 18" Storm and during undercuts (105+85, 23' RT)	Windstream	Windstream to adjust <u>1</u> day
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**Stage 2: 3 Days Total Installation for AT&T**  
**Stage 2: 1 Day Total Installation for Centurylink**  
**Stage 2: 1 Days Total Installation for WOW**  
**Stage 2: 2 Day Total Installation for Windstream**  
**Stage 2 Total: 6 Days**

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

Agency/Company Responsible to Resolve Conflict	Name of contact	Address	Phone	e-mail address
AT&T	Bruce Robbins	1000 Commerce Drive, Floor 1, Oak Brook, IL 60523	630.573.6471	br1831@att.com
Comcast	Thomas Munar	688 Industrial Drive, Elmhurst, IL 60126	224.229.5851	Thomas_Munar@cable.comcast.net
ComEd	Christian Mukania	1 Lincoln Center, 6 <sup>th</sup> Floor, Oakbrook Terrace, IL 60181	630.437.2927	Christian.Mukania@comed.com
Centurylink / Level 3 Communications	Vincent Skau	1305 E. Algonquin Road, Arlington Heights, IL 60005	847.954.8212	Vince.skau@centurylink.com
NICOR	Bruce Koppang	1844 Ferry Road, Naperville, IL 60563	630.388.3046	bkoppan@southernco.com
MCI / Verizon	Sandra Cisneros	220 South Halsted Street, Suite 300, Chicago, IL 60661-5454	312.612.5216	scisneros@telecom-eng.com
Vinakom	Dicky Patel	860 Remington Road, Schaumburg, IL 60173	847.592.5785	dicky.patel@vinakom.com
Windstream	Deven Barnhill	3765 Lexington Drive, Hoffman Estates, IL 60192	847.345.4024	Deven.barnhill@windstream.com
WOW	Jared Trombetta	1674 Frontenac Road, Naperville, IL 60563	630.486.9038	Jared.Trombetta@wowinc.com

Verizon Wireless	Randall Kula			randallkulavzw@gmail.com
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**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 owners part can be secured.

Stage 1

<b>STAGE/ LOCATION</b>	<b>TYPE</b>	<b>DESCRIPTION</b>	<b>OWNER</b>	<b>ACTION</b>
State Pkwy 31+92, 55' RT	Buried Fiber Optic	Existing fiber optic line is in conflict with a proposed light pole	Vinakom	Vinakom will watch and protect line
Crossing State Pkwy at 43+09	Buried Fiber Optic	Existing Fiber Optic cable unknown depth, Vinakom to watch and protect line during construction	Vinakom	Vinakom will watch and protect line
Remington Rd 302+94, 3' RT	Buried Fiber Optic	Existing fiber optic line is in conflict with proposed storm sewer and proposed pavement	Vinakom	Vinakom will watch and protect line



Stage 2

<b>STAGE/ LOCATION</b>	<b>TYPE</b>	<b>DESCRIPTION</b>	<b>OWNER</b>	<b>ACTION</b>
State Pkwy at Tower Rd 30+82	Buried Fiber Optic	Existing Fiber Optic cable at shallow depth, Vinakom to watch and protect line during construction	Vinakom	Vinakom will watch and protect line
Crossing State Pkwy at 43+09	Buried Fiber Optic	Existing Fiber Optic cable unknown depth, Vinakom to watch and protect line during construction	Vinakom	Vinakom will watch and protect line

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 taken into account 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 in the action column 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 dates 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. The Department's contractor is responsible for contacting J.U.L.I.E. prior to any and all excavation work.

## 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 Report
- Boring Logs
- Pavement Cores
- Location Drainage Study (LDS)
- Hydraulic Report
- Noise Analysis
- Other:      Subdivision Control Ordinance #1639  
                    Schaumburg Plumbing Code

Those seeking these reports should request access from:

Ms. Kristin Mehl, P.E.  
Engineering Division Manager  
Village of Schaumburg Engineering and Public Works  
714 South Plum Grove Road  
Schaumburg, IL 60193  
847.923.6618  
kmehl@ci.schaumburg.il.us

## **COOPERATION WITH ADJACENT CONTRACTS**

The intent of this provision is to inform the Contractor that the Department is aware of adjacent contracts that are currently scheduled during the same time period as this contract.

Plum Grove Road: IL Route 58 (Golf Road) to Wiley Road  
Section 14-00115-01-PV  
Contract No. 61E16

Plum Grove Road: IL Route 72 (Higgins Road) to IL Route 58 (Golf Road)  
Section 14-00115-00-PV  
Contract No. 61E29

The Contractor is required to cooperate with these adjacent contracts in accordance with Section 105.08 of the Standard Specifications and may be required to modify his staging operations in order to meet these requirements.

## **SAW CUTTING**

The Contractor shall saw cut pavement, curb and gutter, driveways, sidewalk, and patches to separate the existing material to be removed by means of an approved concrete saw to a depth as shown on the plans or as directed by the Engineer. This work shall be included in the cost of the item being removed.

The Contractor shall be required to saw vertical cuts so as to form clean vertical joints. Should the Contractor deface any edge, a new sawed joint shall be provided and any additional work, including removal and replacement, shall be done at the Contractor's expense.

## **COARSE AGGREGATE FOR BACKFILL, TRENCH BACKFILL AND BEDDING (D-1)**

Effective: November 1, 2011

Revised: November 1, 2013

This work shall be according to Section 1004.05 of the Standard Specifications except for the following:

Reclaimed Asphalt Pavement (RAP) maybe blended with gravel, crushed gravel, crushed stone crushed concrete, crushed slag, chats, crushed sand stone or wet bottom boiler slag. The RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications". The RAP shall be uniformly graded and shall pass the 1.0 in. (25 mm) screen. When RAP is blended with any of the coarse aggregate listed above, the blending shall be done mechanically with calibrated feeders. The feeders shall have an accuracy of  $\pm 2.0$  percent of the actual quantity of material delivered. The final blended product shall not contain more than 40 percent by weight RAP.

The coarse aggregate listed above shall meet CA 6 and CA 10 gradations prior to being blended with the processed and uniformly graded RAP. Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

**AGGREGATE SUBGRADE IMPROVEMENT (D-1)**

Effective: February 22, 2012

Revised: April 1, 2016

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.

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

Item	Article/Section
(a) Coarse Aggregate .....	1004.07
(b) Reclaimed Asphalt Pavement (RAP) (Notes 1, 2 and 3) .....	1031

Note 1. Crushed RAP, from either full depth or single lift removal, may be mechanically blended with aggregate gradation CS 01 but shall not exceed 40 percent by weight of the total product. The top size of the Coarse RAP shall be less than 4 in. (100 mm) and well graded.

Note 2. RAP having 100 percent passing the 1 1/2 in (37.5 mm) sieve and being well graded, may be used as capping aggregate in the top 3 in. (75 mm) when aggregate gradation CS 01 is used in lower lifts. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders. The final product shall not contain more than 40 percent by weight of RAP.

Note 3. The RAP used for aggregate subgrade improvement shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”.

**303.03 Equipment.** The vibratory machine shall be according to Article 1101.01, or as approved by the Engineer. The calibration for the mechanical feeders shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered.

**303.04 Soil Preparation.** The stability of the soil shall be according to the Department’s Subgrade Stability Manual for the aggregate thickness specified.

**303.05 Placing Aggregate.** The maximum nominal lift thickness of aggregate gradation CS 01 shall be 24 in. (600 mm).

**303.06 Capping Aggregate.** The top surface of the aggregate subgrade shall consist of a minimum 3 in. (75 mm) of aggregate gradations CA 06 or CA 10. When Reclaimed Asphalt Pavement (RAP) is used, it shall be crushed and screened where 100 percent is passing the 1 1/2 in. (37.5 mm) sieve and being well graded. RAP that has been fractionated to size will not be permitted for use in capping. Capping aggregate will not be required when the aggregate subgrade improvement is used as a cubic yard pay item for undercut applications. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders.

**303.07 Compaction.** All aggregate lifts 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.

**303.08 Finishing and Maintenance of Aggregate Subgrade Improvement.** 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.

**303.09 Method of Measurement.** This work will be measured for payment according to Article 311.08.

**303.10 Basis of Payment.** This work will be paid for at the contract unit price per cubic yard (cubic meter) 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.** 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. The top 12 inches of the aggregate subgrade improvement shall be 3 inches of capping material and 9 inches of crushed gravel, crushed stone or crushed concrete. In applications where greater than 36 inches of subgrade material is required, rounded gravel, meeting the CS01 gradation, may be used beginning at a depth of 12 inches below the bottom of pavement.

(b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials. Non-mechanically blended RAP may be allowed up to a maximum of 5.0 percent.

(c) Gradation.

(1) The coarse aggregate gradation for total subgrade thicknesses of 12 in. (300 mm) or greater shall be CS 01.

Grad No.	COARSE AGGREGATE SUBGRADE GRADATIONS				
	Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

Grad No.	COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)				
	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

The 3 in. (75 mm) capping aggregate shall be gradation CA 6 or CA 10.

**DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (DISTRICT 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."

**FRICTION AGGREGATE (D-1)**

Effective: January 1, 2011

Revised: April 29, 2016

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>
HMA High ESAL Low ESAL	C Surface and Leveling Binder IL-9.5      or      IL- 9.5L  SMA Ndesign      50 Surface	<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>



Use	Mixture	Aggregates Allowed								
HMA High ESAL	D Surface and Leveling Binder IL-9.5  SMA Ndesign 50 Surface	<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> Crushed Concrete <sup>3/</sup>								
		<u>Other Combinations Allowed:</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"><i>Up to...</i></td> <td style="width: 50%; text-align: center;"><i>With...</i></td> </tr> <tr> <td style="text-align: center;">25% Limestone</td> <td style="text-align: center;">Dolomite</td> </tr> <tr> <td style="text-align: center;">50% Limestone</td> <td style="text-align: center;">Any Mixture D aggregate other than Dolomite</td> </tr> <tr> <td style="text-align: center;">75% Limestone</td> <td style="text-align: center;">Crushed Slag (ACBF) or Crushed Sandstone</td> </tr> </table>	<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
		<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> :  Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag  No Limestone.								
		<u>Other Combinations Allowed:</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"><i>Up to...</i></td> <td style="width: 50%; text-align: center;"><i>With...</i></td> </tr> <tr> <td style="text-align: center;">50% Dolomite<sup>2/</sup></td> <td style="text-align: center;">Any Mixture E aggregate</td> </tr> <tr> <td style="text-align: center;">75% Dolomite<sup>2/</sup></td> <td style="text-align: center;">Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone</td> </tr> </table>	<i>Up to...</i>	<i>With...</i>	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		
		<i>Up to...</i>	<i>With...</i>							
		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									

Use	Mixture	Aggregates Allowed	
		75% Crushed Gravel <sup>2/</sup> or Crushed Concrete <sup>3/</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> , Crushed Concrete <sup>3/</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. In SMA Ndesign 50, carbonate crushed stone shall not be blended with any of the other aggregates allowed alone in Ndesign 50 SMA binder or Ndesign 50 SMA surface.
- 3/ Crushed concrete will not be permitted in SMA mixes.
- 4/ Crushed steel slag shall not be used as leveling 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.”

**HMA MIXTURE DESIGN REQUIREMENTS (D-1)**

Effective: January 1, 2013  
 Revised: January 1, 2018

**1) Design Composition and Volumetric Requirements**

Revise the table in Article 406.06(d) of the Standard Specifications to read:

"MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19)
SMA-9.5, IL-9.5, IL-9.5L	1 1/2 (38)
SMA-12.5	2 (50)
IL-19.0, IL-19.0L	2 1/4 (57)"

Revise the table in Article 1004.03(c) of the Standard Specifications to read:

"Use	Size/Application	Gradation No.
Class A-1, 2, & 3	3/8 in. (10 mm) Seal	CA 16
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & 3	Cover	CA 14
HMA High ESAL	IL-19.0 IL-9.5	CA 11 <sup>1/</sup> CA 16, CA 13 <sup>3/</sup>
HMA Low ESAL	IL-19.0L IL-9.5L Stabilized Subbase or Shoulders	CA 11 <sup>1/</sup> CA 16
SMA <sup>2/</sup>	1/2 in. (12.5mm) Binder & Surface IL 9.5 Surface	CA13 <sup>3/</sup> , CA14 or CA16  CA16, CA 13 <sup>3/</sup>

1/ CA 16 or CA 13 may be blended with the gradations listed.

2/ The coarse aggregates used shall be capable of being combined with stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation and mineral filler to meet the approved mix design and the mix requirements noted herein.

3/ 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  $\leq 2.0$  percent.”

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 steel slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours.”

Revise the nomenclature table in Article 1030.01 of the Standard Specifications to read:

“High ESAL	IL-19.0 binder; IL-9.5 surface; IL-4.75; SMA-12.5, SMA-9.5
Low ESAL	IL-19.0L binder; IL-9.5L surface; Stabilized Subbase (HMA) <sup>1/</sup> ; HMA Shoulders <sup>2/</sup>

1/ Uses 19.0L binder mix.

2/ Uses 19.0L for lower lifts and 9.5L for surface lift.”

Revise Article 1030.02 of the Standard Specifications and Supplemental Specifications to read:

**“1030.02 Materials.** Materials shall be according to the following.

Item.....	Article/Section
(a) Coarse Aggregate .....	1004.03
(b) Fine Aggregate .....	1003.03
(c) RAP Material .....	1031
(d) Mineral Filler .....	1011
(e) Hydrated Lime .....	1012.01
(f) Slaked Quicklime (Note 1)	
(g) Performance Graded Asphalt Binder (Note 2) .....	1032
(h) Fibers (Note 3)	
(i) Warm Mix Asphalt (WMA) Technologies (Note 4)	

Note 1. Slaked quicklime shall be according to ASTM C 5.

Note 2. 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 an Elvaloy or SBS PG 76-22 for IL-4.75, except where modified herein. The elastic recovery shall be a minimum of 80.

Note 3. 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 4. Warm mix additives or foaming processes shall be selected from the current Bureau of Materials and Physical Research Approved List, "Warm Mix Asphalt Technologies".

Revise Article 1030.04(a)(1) of the Standard Specifications and the Supplemental Specifications to read:

“(1) High ESAL Mixtures. The Job Mix Formula (JMF) shall fall within the following limits.

High ESAL, MIXTURE COMPOSITION (% PASSING) <sup>1/</sup>										
Sieve Size	IL-19.0 mm		SMA <sup>4/</sup> IL-12.5 mm		SMA <sup>4/</sup> IL-9.5 mm		IL-9.5 mm		IL-4.75 mm	
	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
3/8 in. (9.5 mm)				65	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	90	100
#8 (2.36 mm)	20	42	16	24 <sup>5/</sup>	16	32 <sup>5/</sup>	34 <sup>6/</sup>	52 <sup>2/</sup>	70	90
#16 (1.18 mm)	15	30					10	32	50	65
#30 (600 μm)			12	16	12	18				
#50 (300 μm)	6	15					4	15	15	30
#100 (150 μm)	4	9					3	10	10	18
#200 (75 μm)	3	6	7.0	9.0 <sup>3/</sup>	7.5	9.5 <sup>3/</sup>	4	6	7	9 <sup>3/</sup>
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		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/ The maximum percent passing the #635 (20 µm) sieve shall be ≤ 3 percent.
- 5/ 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.
- 6/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.

Revise Article 1030.04(b)(1) of the Standard Specifications to read:

- “(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent and for IL-4.75 it shall be 3.5 percent at the design number of gyrations. The VMA and 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.

VOLUMETRIC REQUIREMENTS				
High ESAL				
	Voids in the Mineral Aggregate (VMA), % minimum			Voids Filled with Asphalt Binder (VFA), %
Ndesign	IL-19.0	IL-9.5	IL-4.75 <sup>1/</sup>	
50	13.5	15.0	18.5	65 – 78 <sub>2/</sub>
70			65 - 75	
90				

1/ Maximum Draindown for IL-4.75 shall be 0.3 percent

2/ VFA for IL-4.75 shall be 72-85 percent”

Replace Article 1030.04(b)(3) of the Standard Specifications with the following:

“(3) SMA Mixtures.

Volumetric Requirements SMA <sup>1/</sup>			
Ndesign	Design Air Voids Target %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
80 <sup>4/</sup>	3.5	17.0 <sup>2/</sup>	75 - 83
		16.0 <sup>3/</sup>	

1/ Maximum draindown shall be 0.3 percent. The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30 °F.

2/ Applies when specific gravity of coarse aggregate is  $\geq 2.760$ .

3/ Applies when specific gravity of coarse aggregate is  $< 2.760$ .

4/ Blending of different types of aggregate will not be permitted. 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.

Add to the end of Article 1030.05 (d) (2) a. of the Standard Specifications:

“During production, the Contractor shall test SMA mixtures for draindown according to AASHTO T305 at a frequency of 1 per day of production.”

Delete last sentence of the second paragraph of Article 1102.01(a) (4) b. 2.

Add to the end of Article 1102.01 (a) (4) b. 2.:

“As an option, collected dust (baghouse) may be used in lieu of manufactured mineral filler according to the following:

(a.) Sufficient collected dust (baghouse) is available for production of the SMA mix for the entire project.

(b.) A mix design was prepared based on collected dust (baghouse).

**2) Design Verification and Production**

Revise Article 1030.04 (d) of the Standard Specifications to read:

“(d) Verification Testing. High ESAL, IL-4.75, and SMA mix designs submitted for verification will be tested to ensure that the resulting mix designs will pass the

required criteria for the Hamburg Wheel Test (IL mod AASHTO T-324) and the Tensile Strength Test (IL mod AASHTO T-283). The Department will perform a verification test on gyratory specimens compacted by the Contractor. If the mix fails the Department’s verification test, the Contractor shall make the necessary changes to the mix and resubmit compacted specimens to the Department for verification. If the mix fails again, the mix design will be rejected.

All new and renewal mix designs will be required to be tested, prior to submittal for Department verification and shall meet the following requirements:

- (1)Hamburg Wheel Test criteria. The maximum allowable rut depth shall be 0.5 in. (12.5 mm). The minimum number of wheel passes at the 0.5 in. (12.5 mm) rut depth criteria shall be based on the high temperature binder grade of the mix as specified in the mix requirements table of the plans.

Illinois Modified AASHTO T 324 Requirements <sup>1/</sup>

Asphalt Binder Grade	# Repetitions	Max Rut Depth (mm)
PG 70 -XX (or higher)	20,000	12.5
PG 64 -XX (or lower)	10,000	12.5

1/ When produced at temperatures of 275 ± 5 °F (135 ± 3 °C) or less, loose Warm Mix Asphalt shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg Wheel specimens.

Note: For SMA Designs (N-80) the maximum rut depth is 6.0 mm at 20,000 repetitions.  
 For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

- (2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 60 psi (415 kPa) for non-polymer modified performance graded (PG) asphalt binder and 80 psi (550 kPa) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 200 psi (1380 kPa).”

Production Testing. Revise first paragraph of Article 1030.06(a) of the Standard Specifications to read:

- “(a) High ESAL, IL-4.75, WMA, and SMA Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for SMA mixtures it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture at the beginning of 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.”

Add the following after the sixth paragraph in Article 1030.06 (a) of the Standard Specifications:

“The Hamburg Wheel test shall also be conducted on all HMA mixtures from a sample taken within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1500 tons (1350 metric tons) or one day’s production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract.

If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria”

Method of Measurement:

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

“The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface Mix Design’s  $G_{mb}$ .”

Basis of Payment.

Replace the fourth paragraph of Article 406.14 of the Standard Specifications with the following:

“Stone matrix asphalt will be paid for at the contract unit price per ton (metric ton) for POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition and  $N_{design}$  specified; and POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and  $N_{design}$  specified.”

## **RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-1)**

Effective: November 1, 2012

Revise: January 1, 2018

Revise Section 1031 of the Standard Specifications to read:

### **“SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES**

**1031.01 Description.** Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

- (a) Reclaimed Asphalt Pavement (RAP). RAP is the material resulting from cold milling or crushing an existing hot-mix asphalt (HMA) pavement. RAP will be considered processed FRAP after completion of both crushing and screening to size. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.
- (b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Central Bureau of Materials Policy Memorandum, “Reclaimed Asphalt Shingle (RAS) Sources”, by weight of RAS. All RAS used shall come from a Central Bureau of Materials approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 90 percent passing the #4 (4.75 mm) sieve. RAS shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.
  - (1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.
  - (2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

**1031.02 Stockpiles.** RAP and RAS stockpiles shall be according to the following.

- (a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. Additional processed RAP (FRAP) shall be stockpiled in a separate working pile, as designated in the QC Plan, and only added to the sealed stockpile when test results for the working pile are complete and are found to meet tolerances specified herein for the original sealed FRAP stockpile. Stockpiles shall be sufficiently separated to prevent intermingling at the base. All stockpiles (including unprocessed RAP and FRAP) shall be identified by signs indicating the type as listed below (i.e. “Non- Quality, FRAP -#4 or Type 2 RAS”, etc...).

- (1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. All FRAP shall be processed prior to testing and sized into fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP in the coarse fraction shall pass the maximum sieve size specified for the mix the FRAP will be used in.
- (2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, HMA (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 in. (75 mm) single combined pass of surface/binder milling will be classified as B quality. All millings from this application will be processed into FRAP as described previously.
- (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed (FRAP) prior to testing. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from HMA shoulders, bituminous stabilized subbases or HMA (Low ESAL)/HMA (Low ESAL) IL-19.0L binder mixture. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP or FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, plant cleanout etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

- (b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall be sufficiently separated to prevent intermingling at the base. Each stockpile shall be signed indicating what type of RAS is present.

However, a RAS source may submit a written request to the Department for approval to blend mechanically a specified ratio of Type 1 RAS with Type 2 RAS. The source will not be permitted to change the ratio of the blend without the

Department prior written approval. The Engineer's written approval will be required, to mechanically blend RAS with any fine aggregate produced under the AGCS, up to an equal weight of RAS, to improve workability. The fine aggregate shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The fine aggregate shall be one that is approved for use in the HMA mixture and accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type, and lot number shall be maintained by project contract number and kept for a minimum of three years.

**1031.03 Testing.** FRAP and RAS testing shall be according to the following.

- (a) FRAP Testing. When used in HMA, the FRAP shall be sampled and tested either during processing or after stockpiling. It shall also be sampled during HMA production.
  - (1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).
  - (2) Incoming Material. For testing as incoming material, washed extraction samples shall be run at a minimum frequency of one sample per 2000 tons (1800 metric tons) or once per week, whichever comes first.
  - (3) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample of FRAP, shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

- (b) RAS Testing. RAS shall be sampled and tested during stockpiling according to Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources". The Contractor shall also sample as incoming material at the HMA plant.
  - (1) During Stockpiling. Washed extraction and testing for unacceptable materials shall be run at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a  $\leq$  1000 ton

(900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.

- (2) Incoming Material. For testing as incoming material at the HMA plant, washed extraction shall be run at the minimum frequency of one sample per 250 tons (227 metric tons). A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). The incoming material test results shall meet the tolerances specified herein.

The Contractor shall obtain and make available all test results from start of the initial stockpile sampled and tested at the shingle processing facility in accordance with the facility's QC Plan.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

**1031.04 Evaluation of Tests.** Evaluation of test results shall be according to the following.

- (a) Evaluation of FRAP Test Results. All test results shall be compiled to include asphalt binder content, gradation and, when applicable (for slag),  $G_{mm}$ . A five test average of results from the original pile will be used in the mix designs. Individual extraction test results run thereafter, shall be compared to the average used for the mix design, and will be accepted if within the tolerances listed below.

Parameter	FRAP
No. 4 (4.75 mm)	± 6 %
No. 8 (2.36 mm)	± 5 %
No. 30 (600 μm)	± 5 %
No. 200 (75 μm)	± 2.0 %
Asphalt Binder	± 0.3 %
$G_{mm}$	± 0.03 <sup>1/</sup>

1/ For stockpile with slag or steel slag present as determined in the current Manual of Test Procedures Appendix B 21, "Determination of Reclaimed Asphalt Pavement Aggregate Bulk Specific Gravity".

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the FRAP stockpile shall not be used in Hot-Mix Asphalt unless the FRAP representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

The Contractor shall maintain a representative moving average of five tests to be used for Hot-Mix Asphalt production.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the ITP, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)" or Illinois Modified AASHTO T-164-11, Test Method A.

- (b) Evaluation of RAS Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. A five test average of results from the original pile will be used in the mix designs. Individual test results run thereafter, when compared to the average used for the mix design, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.5 %
Asphalt Binder Content	± 2.0 %

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the RAS shall not be used in Hot-Mix Asphalt unless the RAS representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

- (c) Quality Assurance by the Engineer. The Engineer may witness the sampling and splitting conduct assurance tests on split samples taken by the Contractor for quality control testing a minimum of once a month.

The overall testing frequency will be performed over the entire range of Contractor samples for asphalt binder content and gradation. The Engineer may select any or all split samples for assurance testing. The test results will be made available to the Contractor as soon as they become available.

The Engineer will notify the Contractor of observed deficiencies.

Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits.

Test Parameter	Acceptable Limits of Precision	
	FRAP	RAS
% Passing: <sup>1/</sup>		
1/2 in.	5.0%	
No. 4	5.0%	
No. 8	3.0%	4.0%
No. 30	2.0%	4.0%
No. 200	2.2%	4.0%
Asphalt Binder Content	0.3%	3.0%
G <sub>mm</sub>	0.030	

1/ Based on washed extraction.

In the event comparisons are outside the above acceptable limits of precision, the Engineer will immediately investigate.

- (d) Acceptance by the Engineer. Acceptable of the material will be based on the validation of the Contractor's quality control by the assurance process.

**1031.05 Quality Designation of Aggregate in RAP and FRAP.**

- (a) RAP. The aggregate quality of the RAP for homogeneous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

- (1) RAP from Class I, HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.
- (2) RAP from HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.
- (3) RAP from Class I, HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.
- (4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

- (b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Fractionated RAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the

specified testing. The consultant laboratory shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the Central Bureau of Materials Aggregate Lab for MicroDeval Testing, according to ITP 327. A maximum loss of 15.0 percent will be applied for all HMA applications. The fine aggregate portion of the fractionated RAP shall not be used in any HMA mixtures that require a minimum of "B" quality aggregate or better, until the coarse aggregate fraction has been determined to be acceptable thru a MicroDeval Testing.

**1031.06 Use of FRAP and/or RAS in HMA.** The use of FRAP and/or RAS shall be the Contractor's option when constructing HMA in all contracts.

(a) FRAP. The use of FRAP in HMA shall be as follows.

- (1) Coarse Aggregate Size (after extraction). The coarse aggregate in all FRAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
- (2) Steel Slag Stockpiles. FRAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) mixtures regardless of lift or mix type.
- (3) Use in HMA Surface Mixtures (High and Low ESAL). FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall have coarse aggregate that is Class B quality or better. FRAP shall be considered equivalent to limestone for frictional considerations unless produced/screened to minus 3/8 inch.
- (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP in which the coarse aggregate is Class C quality or better.
- (5) Use in Shoulders and Subbase. FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, Restricted FRAP, conglomerate, or conglomerate DQ.

(b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.

(c) FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with FRAP in HMA mixtures up to a maximum of 5.0 percent by weight of the total mix.

When FRAP is used alone or FRAP is used in conjunction with RAS, the percent of virgin asphalt binder replacement (ABR) shall not exceed the amounts indicated in the table below for a given N Design.



Max Asphalt Binder Replacement for FRAP with RAS Combination

HMA Mixtures <i>1/ 2/ 4/</i>	Maximum % ABR		
	Ndesign	Binder/Leveling Binder	Surface
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
4.75 mm N-50			40
SMA N-80			30

- 1/ For Low ESAL HMA shoulder and stabilized subbase, the percent asphalt binder replacement shall not exceed 50 % of the total asphalt binder in the mixture.
- 2/ When the binder replacement exceeds 15 % for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 % binder replacement using a virgin asphalt binder grade of PG64-22 will be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 %, the required virgin asphalt binder grade shall be PG64-28.
- 3/ When the ABR for SMA or IL-4.75 is 15 % or less, the required virgin asphalt binder shall be SBS PG76-22 and the elastic recovery shall be a minimum of 80. When the ABR for SMA or IL-4.75 exceeds 15%, the virgin asphalt binder grade shall be SBS PG70-28 and the elastic recovery shall be a minimum of 80.
- 4/ When FRAP or RAS is used alone, the maximum percent asphalt binder replacement designated on the table shall be reduced by 10 %.

**1031.07 HMA Mix Designs.** At the Contractor’s option, HMA mixtures may be constructed utilizing RAP/FRAP and/or RAS material meeting the detailed requirements specified herein.

(a) FRAP and/or RAS. FRAP and /or RAS mix designs shall be submitted for verification. If additional FRAP or RAS stockpiles are tested and found to be within tolerance, as defined under “Evaluation of Tests” herein, and meet all requirements herein, the additional FRAP or RAS stockpiles may be used in the original design at the percent previously verified.

(b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design.

The RAP, FRAP and RAS stone specific gravities ( $G_{sb}$ ) shall be according to the "Determination of Aggregate Bulk (Dry) Specific Gravity ( $G_{sb}$ ) or Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)" procedure in the Department's Manual of Test Procedures for Materials.

**1031.08 HMA Production.** HMA production utilizing FRAP and/or RAS shall be as follows.

To remove or reduce agglomerated material, a scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAS and FRAP feed system to remove or reduce oversized material. .

If during mix production, corrective actions fail to maintain FRAP, RAS or QC/QA test results within control tolerances or the requirements listed herein the Contractor shall cease production of the mixture containing FRAP or RAS and conduct an investigation that may require a new mix design.

(a) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within  $\pm 0.5$  percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

(b) HMA Plant Requirements. HMA plants utilizing FRAP and/or RAS shall be capable of automatically recording and printing the following information.

(1) Dryer Drum Plants.

- a. Date, month, year, and time to the nearest minute for each print.
- b. HMA mix number assigned by the Department.
- c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- d. Accumulated dry weight of RAS and FRAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.
- f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.

- g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.
  - h. Aggregate RAS and FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAS and FRAP are printed in wet condition.)
  - i. When producing mixtures with FRAP and/or RAS, a positive dust control system shall be utilized.
  - j. Accumulated mixture tonnage.
  - k. Dust Removed (accumulated to the nearest 0.1 ton (0.1 metric ton))
- (2) Batch Plants.
- a. Date, month, year, and time to the nearest minute for each print.
  - b. HMA mix number assigned by the Department.
  - c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).
  - d. Mineral filler weight to the nearest pound (kilogram).
  - f. RAS and FRAP weight to the nearest pound (kilogram).
  - g. Virgin asphalt binder weight to the nearest pound (kilogram).
  - h. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

**1031.09 RAP in Aggregate Surface Course and Aggregate Wedge Shoulders, Type B.** The use of RAP or FRAP in aggregate surface course and aggregate shoulders shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Non-Quality" and "FRAP". The testing requirements of Article 1031.03 shall not apply. RAP used shall be according to the current Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".
- (b) Gradation. The RAP material shall meet the gradation requirements for CA 6 according to Article 1004.01(c), except the requirements for the minus No. 200

(75 µm) sieve shall not apply. The sample for the RAP material shall be air dried to constant weight prior to being tested for gradation.”

**GROUND TIRE RUBBER (GTR) MODIFIED ASPHALT BINDER (D-1)**

Effective: June 26, 2006

Revised: April 1, 2016

Add the following to the end of article 1032.05 of the Standard Specifications:

“(c) Ground Tire Rubber (GTR) Modified Asphalt Binder. A quantity of 10.0 to 14.0 percent GTR (Note 1) shall be blended by dry unit weight with a PG 64-28 to make a GTR 70-28 or a PG 58-28 to make a GTR 64-28. The base PG 64-28 and PG 58-28 asphalt binders shall meet the requirements of Article 1032.05(a). Compatible polymers may be added during production. The GTR modified asphalt binder shall meet the requirements of the following table.

Test	Asphalt Grade GTR 70-28	Asphalt Grade GTR 64-28
Flash Point (C.O.C.), AASHTO T 48, °F (°C), min.	450 (232)	450 (232)
Rotational Viscosity, AASHTO T 316 @ 275 °F (135 °C), Poises, Pa·s, max.	30 (3)	30 (3)
Softening Point, AASHTO T 53, °F (°C), min.	135 (57)	130 (54)
Elastic Recovery, ASTM D 6084, Procedure A (sieve waived) @ 77 °F, (25 °C), aged, ss, 100 mm elongation, 5 cm/min., cut immediately, %, min.	65	65

Note 1. GTR shall be produced from processing automobile and/or light truck tires by the ambient grinding method. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall contain no free metal particles or other 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, 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

Add the following to the end of Note 1. 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 must be capable of providing continuous mechanical mixing throughout by continuous agitation and 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.”

Revise 1030.02(c) of the Standard Specifications to read:

“(c) RAP Materials (Note 5) .....1031”

Add the following note to 1030.02 of the Standard Specifications:

Note 5. When using reclaimed asphalt pavement and/or reclaimed asphalt shingles, the maximum asphalt binder replacement percentage shall be according to the most recent special provision for recycled materials.

## **ADJUSTMENTS AND RECONSTRUCTIONS**

Effective: March 15, 2011

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-1 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-1 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-1 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-1 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.”

## **DUCTILE IRON WATER MAIN (VOS) DUCTILE IRON WATER MAIN FITTINGS (VOS)**

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 Engineer. The water main shall include excavation, granular bedding, installation of the water main, fittings, testing and chlorination of the water main, backfill and compaction of the trench and all incidental items required for a complete and operational water main.

All water main and related work and material shall be completed in accordance with Village of Schaumburg specifications, the “Standard Specifications for Water and Sewer Main Construction in Illinois”, latest edition, the American Water Works Association (AWWA). In case of conflict, the more stringent of the requirements shall apply.

### Sequence of Water Main Construction

The Contractor is required to coordinate with the Engineer and with the Village of Schaumburg to establish an acceptable Sequence of Construction for the installation of the proposed water main. The Contractor is required to submit a construction schedule and sequence plan at the time of the pre-construction meeting.

### Materials

Water main pipe and fittings must conform to the applicable paragraphs of the “Standard Specifications For Water And Sewer Main Construction In Illinois”, current edition.

Ductile Iron Water Main Pipe:

Ductile iron pipe shall be CL-52 Ductile Iron Pipe and conform to AWWA specifications C151-65. Normal working pressure shall not exceed one hundred fifty (150) psi. Pipe shall be furnished in nominal eighteen foot (18') laying lengths.

Ductile iron pipe shall be bituminous coated cement mortar lined as specified in section 51-8.2 of AWWA specification C151-65. The ductile iron pipe shall be coated on the outside as specified in section 15.8.1 with the exceptions that the thickness of the coating shall be an average of two (2) to four (4) mils and a minimum of two (2) mils. Each pipe shall have the weight and class designation conspicuously painted on it. In addition, the manufacturer's mark and year in which the pipe was made shall be distinctly cast or stamped on the bell.

All fittings shall be cement lined, tar coated ductile iron with mechanical joints rated 250 psi per AWWA C110/ANSI 21.10 latest revision or AWWA C153/A21.53 latest revision. All fitting shall have mechanical joints conforming to AWWA C111/A21.11 latest revision (Clow, Tyler, or Union Foundry). All the nut and bolts required for the installation of all fitting shall be stainless steel Type 304. All fittings shall be connected to sections of water main pipe by means of a positive restrained joint consisting of mechanical joints with retainer gland or Megalug joints.

Polyethylene encasement (wrap) shall be installed for all buried water main piping, fittings, and valves as shown on the plans. Encasement or wrapping of piping shall be polyethylene film in tube or sheet and shall be in accordance with AWWA C105/A21.5-82 suitable for the appropriate diameter water main. The contractor shall follow the installation guideline as set forth with AWWA specification C-105 and as detailed on the plans.

Ductile Iron Water Main Pipe Joints:

Slip Joints: Sections of water main pipe shall be connected by means of slip joints, consisting of bells cast integrally with pipe which have interior angular recesses conforming with the shape and dimensions of a rubber sealing gasket, the interior dimension of which is such that it will admit the insertion of the spigot end of the joining pipe in such manner as to compress the gasket tightly between the bell of the pipe and the inserted spigot, thus securing the gasket and sealing the joint. Such a slip joint shall be any one of the following make or type:

Super Belltite - as supplied by Griffin.

Fastite - as supplied by the American Cast Iron Pipe Company.

Tyton - as supplied by the U.S. Pipe and Foundry Company, or the Clow Valve Co.

The lubricant used in conjunction with the slip joints shall be that recommended by the supplier specified.

**Mechanical Joint Pipe:**

**Bolting Material:** Mechanical joint pipe shall meet the requirement of ASA specification A-U 11. Bolting materials shall meet the requirements of the manufacturer.

All water main fasteners shall be 304 stainless steel.

**Construction Requirements:**

**Excavation:** The trench shall be excavated so that the water main will have a minimum cover of five and one-half feet (5½'). The trench for the pipe shall be excavated at least twelve inches (12") wider than the external diameter of the pipe and not more than eighteen inches (18") wider than the diameter of the pipe at the top of the pipe.

Bell holes of sufficient depth shall be provided across the bottom of the trench to accommodate the bell of the pipe to provide sufficient room for joint making and to ensure uniform bearing for the pipe.

Where a firm foundation is not found to exist for the bottom of the trench at the required depth, due to soft, spongy or other unsuitable soil, such unsuitable soil shall be removed for the full width of the trench or tunnel and replaced with well compacted unwashed gravel or an equal substitute therefor, or crushed stone if such compacted material proved unsatisfactory. Where rock in either ledge or boulder formation is encountered, it shall be removed below grade and replaced with a well-compacted cushion of unwashed gravel having a thickness under the pipe of not less than eight inches (8").

If the excavation has been made deeper than necessary, the water main shall be laid at the proper depth by installing CA-6 to the lower bedding depth, and no additional cost shall be charged for the additional stone or for subsequent adjustments to fire hydrants, valves, valve vaults or house services. All excavation materials not needed for backfilling the trenches shall be disposed of by the Contractor.

**Sheeting and Bracing:** Sheeting and bracing shall be per OSHA requirements. While sheeting is being withdrawn, all vacancies shall be carefully filled with sand free from silt, rammed into place, puddled or otherwise firmly compacted.

**Dewatering Trench:** The Contractor shall provide and use effective and satisfactory methods to lower the groundwater table to a safe plane below the bottom of the work. No pipe shall be laid or jointed unless the trench is completely dewatered.

Water pumped or drained from the work shall be disposed of in a manner that will not damage adjacent private property, other work construction, street pavements, or other municipal property. No water shall be discharged into sanitary sewers. No water containing settleable solids shall be discharged into storm sewers.



Laying Water Main: The Contractor shall keep the trench free from water while the water main is being placed and until the pipe joint has been sealed to the satisfaction of the Engineer.

Adequate provision shall be made for safety, storing and protecting all water pipe prior to 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 other debris from being deposited therein. All pipe shall be thoroughly cleaned on the inside before laying of the pipe. Proper equipment shall be used for the safe handling, conveying and laying of the pipe. All pipe shall be carefully lowered into the trench, piece by piece, by means of a derrick, ropes, or other suitable tools or equipment, in such manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench.

In making 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 jointing shall be in accordance with the manufacturer's installation instructions and/or directed in writing by the Engineer. During construction, until jointing operations are complete, the open ends of all pipes shall be at all times protected and sealed with temporary watertight plugs.

Pipe Cutting: The cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workmanlike manner without damage to cement lining and so as to leave a smooth end at right angles to the axis of the pipe.

When machine cutting is not available for cutting pipe twenty inches (20") in diameter or larger, the electric arc cutting method will be permitted, using a carbon or steel rod. Only qualified and experienced workmen shall be used on this work.

The flame cutting of pipe by means of an oxyacetylene torch shall not be allowed.

Backfilling: The contractor shall not backfill above the top of the pipe, until grade, alignment and the pipe joints have been made available for checking by the Engineer.

Unless otherwise directed, all trenches and excavations shall be backfilled as soon as possible and the work shall be prosecuted expeditiously after it has been commenced.

As soon as it is laid, all pipe shall have the space between the pipe and the bottom and sides of the trench packed full of sand, grade 9 gravel, or clean, dry materials by hand and thoroughly tamped with a shovel, hoe or light tamper, as fast as placed up to the level of the middle of the pipe.

The filling shall be carried up evenly on both sides. Care shall be taken that no rock, frozen material, or other hard substances are placed in contact with the pipe. The pipe shall then be covered at least twelve inches (12") with clean, dry material.

The remainder of the trench shall be backfilled by using the material originally excavated from the ditch (except for conditions hereinafter defined) to a height slightly above the original elevation of the ground.

Pipe constructed in open cut across or within two feet (2') of any existing or proposed pavements, existing driveways and sidewalks, shall be backfilled to subgrade with grade CA-6 gravel tamped in twelve inch (12") lifts into place.

#### Pipe Restraint

All tees, bends, fittings, fire hydrants, and water valves shall be adequately blocked with poured-in-place thrust blocking. All thrust blocks shall be precast or poured with Class SI concrete in accordance with the applicable provisions of Section 500 of the Standard Specifications. When poured, care shall be taken so that the cement does not interfere with access to joints or with hydrant drainage and shall be against undisturbed earth.

In addition to the above blocking, all fittings, valves and hydrants shall be restrained with retainer glands, Megalug Retainer Gland Series 1100 as manufactured by EBBA Iron Inc. (set screw retainer glands will not be accepted). In addition to the Megalug retaining glands at mechanical joint fittings, the bell and spigot joints shall be restrained with Megalug Restraint Harness Series 1700 at each joint one pipe length beyond the fitting.

Locking gaskets will not be an acceptable alternative to restraining the bell and spigot joint.

All water main within casings shall be restrained joints. All nuts and bolts used for the mechanical fitting and restraint systems shall be 304 stainless steel.

#### Water Main Pressure Testing.

##### Pressure Test:

Each section of water main and appurtenances shall be tested by the Contractor and Village jointly. Any defects or leaks shall be corrected by the Contractor.

It is the responsibility of the Contractor to re-excavate the pipe at his expense if the system fails to meet the requirements of the test.

A hydrostatic pressure of one hundred fifty (150) pounds per square inch shall be applied for the testing of the water main, valves, fittings and fire hydrants. The duration of the test shall be for a period of not less than two hours.

Procedure for Test: Each section of pipe shall be tested and 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 elevation 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 the test shall be repeated until satisfactory to the Engineer.

Provisions of AWWA C-600 and C-603, where applicable, shall apply.

The Contractor shall notify the Department of Engineering and Public Works (847-895-7100) a minimum of forty-eight (48) hours in advance to schedule this test. In no instance shall the Contractor draw water from an existing water main or operate any valves on an existing water main without the express permission of the Department of Engineering and Public Works.

**Water Main 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. "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 C-600 and C-603 shall apply. Duration of each leakage test shall be a minimum of one hour in addition to the pressure test period.

1. Allowable leakage in gallons per hour for ductile iron water main shall not be greater than that determined by the formula:

L =	$\frac{ND \times \text{Square root } [P]}{3700}$
-----	--

for mechanical joints and push on joints, or

L =	$\frac{ND \times \text{Sqaure root } [P]}{1850}$
-----	--

for caulked bell and spigot joints.

- 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.

2. "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.

3. Flanged pipe shall be "bottle tight".
4. In no case shall the leakage exceed the greater of either three thousand (3,000) gallons per day per mile of water main or three percent (3%) of total supplied water.

Preliminary Flushing:

Prior to chlorination, the main shall be flushed as thoroughly as possible with the water pressure and outlets available. Flushing shall be done after the pressure test is made. It must be understood that such flushing removes only the lighter solids and cannot be relied upon to remove heavy material allowed to get into the main during laying. If no hydrant is installed at the end of the main, a tap should be provided large enough to effect a velocity in the main of at least 2.5 feet per second.

Sterilization:

The preferred point of application of the chlorinating agent shall be at the beginning of the pipeline extension or any valved section of it and through a corporation stop in the top of the newly laid pipe. The water injector for delivering the chlorine bearing water into the pipe should be supplied from a tap on the pressure side of the gate valve controlling the flow into the pipeline extension. In a new system, application of chlorine may be made at the pumping station, the elevated tank, the standpipe or the reservoir. When properly cleaned first, these units are thus chlorinated adequately.

Water from the existing distribution system or other source of supply shall be controlled so as to flow slowly into the newly laid pipeline during the application of chlorine. The rate of chlorine mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall be at least fifty (50) ppm, or enough to meet the requirements during the retention period. A convenient method of determining the rate of flow of water into the line to be treated is to start with the line full of water and measure the rate of discharge at a hydrant with a Pitot tube. Great flexibility is made possible by providing a series of orifices to give good gauge readings at high and low flows.

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.

Treated water shall be retained in the pipe long enough to destroy all spore forming bacteria. This retention period should be at least twenty-four (24) hours. After the chlorine treated water has been retained for the required time, the chlorine residual at the pipe extremities and at other representative points should be at least ten (10) ppm.

In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent.

Final Flushing And Testing:

Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipeline at its extremities until the replacement water, throughout its length shall, upon test, be approved as safe water by the Department of Engineering and Public Works. This quality of water delivered by the new main should continue for a period of at least two (2) consecutive full days as demonstrated by laboratory examination of samples taken from a tap located and installed in such a way as to prevent outside contamination. Samples should never be taken from an unsterilized hose or from a fire hydrant, because such samples seldom meet current bacteriological standards.

1. Repetition of Procedures: Should the initial treatment fail to result in the conditions specified, the chlorination procedure shall be repeated until such results are obtained.
2. Sampling Tap: Three-quarter inch ( $\frac{3}{4}$ " ) bronze corporation cocks shall be installed in all water mains at intervals not exceeding one thousand feet (1,000').

The Contractor must notify the Department of Engineering and Public Works at least forty-eight (48) hours in advance to arrange for appropriate pressure testing and water samplings. The Contractor is to provide the Department of Engineering and Public Works with sampling bottles at the time of sampling. All samples will be sent to the Cook County Department of Health or to a State of Illinois approved testing lab for analysis.

Environmental Protection Agency:

Water main design, construction, and testing shall in all respects be in accord with the regulations of the Bureau of Public Water Supplies, Environmental Protection Agency, State of Illinois. No construction shall commence until a copy of a permit from this agency is filed with the Village or the Village receives verification from this agency that a permit has been issued.

All water mains must be constructed according to the rules and regulations of the Illinois Department of Public Health regarding the protection of water mains, water service lines and appurtenances from contamination.

Method of Measurement. Water main (of the diameters specified) will be measured per foot in place. Water main shall be measured along the centerline of the water main from the center of the valve to the center of the valve, fittings, or end of the pipe. Water main fittings will be measured by weight in pounds.

Basis of Payment. The installation of the proposed water main shall be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN, of the size and material specified providing and installing the pipe, all equipment, labor, excavation, backfill, testing, chlorination, and furnishing materials as specified herein, including polyethylene encasement. Measurement shall be the actual installed length measured horizontally along the centerline of the pipe. The installation of fittings called out on the plans shall be considered incidental to the DUCTILE IRON WATER MAIN which shall include all

materials, labor and equipment to connect the fittings to the water main pipe and shall include all work and materials associated with construction of the thrust block (if applicable). All fasteners and Retainer glands used at these bends, tees and at water valves are incidental to this item and will not be paid separately. The installation of additional fittings needed due to unforeseen conditions and not shown on the plans shall be paid for at the contract unit price per pound for DUCTILE IRON WATER MAIN FITTINGS. All fasteners and retainer glands used at these additional fittings are incidental to this item and will not be paid separately.

Payment for concrete thrust blocking or retainer glands will not be measured separately for payment but shall be INCLUDED in the cost of the DUCTILE IRON WATER MAIN.

### **ADJUSTING WATER MAIN (VOS)**

Description. This work shall consist of adjusting existing water mains when directed by the Engineer where they are in conflict with the proposed storm sewer or sanitary sewer. This item shall only be used on the existing watermain and shall not be allowed for adjusting the proposed watermain.

All materials used in adjusting the existing water mains shall meet the requirements of the special provisions "Ductile Iron Water Main". All adjustment in the line or grade of the existing water main shall be approved by the Engineer.

All materials, labor, and equipment necessary to adjust the water main shall be on hand before shutdown and cutting of the existing main. The Contractor shall take every precaution to hold the interruption of service to a minimum.

A minimum clearance of eighteen inches (18") shall be maintained between the adjusted main and improvement for which the adjustment was made. A downward adjustment will be required unless 5.5' of cover can be maintained for an upward adjustment or as approved by the Engineer.

Adequate precautions shall be taken to prevent contaminants from entering the existing main. The inside surface of all new materials used in the adjustment shall be cleaned of all foreign materials and swabbed with a solution of efficient bactericide before assembly. The adjusted section shall then be flushed with potable water.

Thrust blocking of Class SI concrete shall also be placed where required and as directed by the Engineer.

Forty-eight (48) hours prior to shutting down the existing main for the adjustments, the facility owner and all users that will be affected shall be notified in writing. The Contractor shall distribute notices of the shut down to the residents affected. The Contractor shall cooperate with the local agency personnel to locate valves necessary to isolate the work area. All valves will be operated by personnel from the owning agency.

Method of Measurement. Adjusting water main (of the diameters specified) will be measured per foot in place. Water mains shall be measured along the center line of the water main from the center of the valve to the center of the valve, fittings, or end of the pipe.

Basis of Payment. This work will be paid for at the contract unit price per foot for ADJUSTING WATERMAIN of the size specified. This price shall include the cost of all excavation, materials, pipe, adapters, joint materials, fittings, blocking, backfill, trench backfill, removal and disposal of existing main, and all work and equipment necessary to make a complete and finished installation.

### **ADJUSTING WATER SERVICE LINES (VOS)**

Description. This work shall consist of adjusting existing water services when directed by the Engineer where they are in conflict with the proposed storm sewer or sanitary sewer.

The Contractor shall locate each water service line in advance of the installation of the proposed storm sewer and sanitary sewer. The Contractor shall determine the depth, location, size and material of each water service line. If an existing water service line is discovered to be in direct conflict with the proposed storm or sanitary sewer, the Contractor shall replace a portion of the existing water service to eliminate the conflict. Flared type joints or compression type joints shall be used between service pipes and fittings and to join pipes.

The existing water service line to be adjusted shall be turned off by personnel from the Water Division of the Department of Engineering and Public Works. The Contractor shall provide a minimum of 3 days advance notice to the Engineer of the need for the water service shut down in order to notify the impacted resident(s). The Village has the right to approve or disapprove the proposed schedule if, in the opinion of the Village, it is not in the best interest of the residents impacted by the water turn off. Proper notification of loss of water service shall be provided by the Contractor with assistance by Village staff. The duration of the shut down for the adjustment of the water service main shall not exceed 5 hours and the water service shall be restored no later than 3:00 PM on the day of the shutdown.

Method of Measurement. Water services to be adjusted shall be measured per foot in place, along the center line of the water service from one point of connection to the existing service to the other point of connection.

Basis of Payment. This work will be paid for at the contract unit price per foot for ADJUSTING WATER SERVICE LINES. This price shall include all labor, equipment, and the cost of all pipe, joint materials, fittings, and installation. Excavation and backfill, with the exception of surface removal items listed specifically in the schedule of prices and trench backfill as required, will not be measured for payment but shall be considered as included in the contract unit price per linear foot of ADJUSTING WATER SERVICE LINES. Granular Cradle from 4 inches below the bottom of the pipe to 12

inches above the top of the pipe will not be measured for payment but shall be considered as included in the per liner foot cost of the pipe installed.

## **FIRE HYDRANTS TO BE REMOVED (VOS)**

Description. This work shall consist of the removal of existing fire hydrants, auxiliary valves, capping the downstream end of the auxiliary valve, backfilling the excavated site and removal of the existing hydrant sign at locations shown on the Plans.

Method of Construction. This work shall conform to the applicable sections of the Standard Specifications for Water and Sewer Main Construction. When a proposed fire hydrant is shown to be installed to replace the existing fire hydrant using the existing tee on the watermain, the Contractor shall remove the fire hydrant, auxiliary valve and valve box, and the watermain from the auxiliary valve to the existing tee.

When a proposed fire hydrant is shown to be installed at an adjacent location and not using the existing tee on a live watermain, the Contractor shall follow the following procedure. The fire hydrant and auxiliary valve along with any pipe should be removed back to the existing tee and the tee should be plugged.

The Contractor shall remove the connector pipe, fire hydrant, and auxiliary valve and valve box (when described above) and coordinate delivery to the location specified by the Village of Schaumburg Public Works Department or dispose of them at the direction of the Engineer.

The Contractor shall backfill the excavation with CA-6 or appropriate backfill, as approved by the Engineer, to the existing grade elevation, unless a new fire hydrant is shown to be installed at this location. The backfill shall be compacted in accordance with Section 550 of the "Standard Specifications" except that only Method 1 shall be used.

Removal of the fire hydrants shall be performed during a shut-down of the water main. The superintendent of the Utility (Village), the Engineer and the Contractor shall mutually agree upon a date and time for connections which will allow ample time to assemble labor and materials, and to notify all customers affected. Customers shall be notified at least 48 hours prior to being taken out of service. Shut-downs may only be possible during off-hours or on weekends. No additional compensation shall be due to the Contractor for work during these times. A maximum length of the shut-down shall be two hours unless otherwise approved by the Engineer.

Method of Measurement. The removal of a fire hydrant with auxiliary valve and box and including all appurtenances shall be measured on a per each basis at each location.

Basis of Payment. This work shall be paid for at the contract unit price per each for FIRE HYDRANT TO BE REMOVED, which price shall include all labor, equipment and material necessary to complete the work as specified herein.



**FIRE HYDRANT (VOS)**  
**FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX (VOS)**

Description This item shall consist of furnishing fire hydrants or fire hydrants with auxiliary valves and valve boxes and installing them at the locations shown on the plans and in accordance with the Standard Specifications for Water and Sewer Main Construction in Illinois.

Materials

1. Fire Hydrants

Fire hydrants shall conform to AWWA Standard C-502 with breakaway traffic flange. They shall have a valve opening of five and one-fourth inches (5 1/4") and shall be equipped with two (2) 2 1/2-inch hose connections and one 4 1/2-inch male pumper connection. The outside diameter of the male thread on the two and one-half inch (2 1/2") hose connections shall be "national standard" threads. Hose caps shall not be fastened to barrel, the steel chain shall be removed.

A suitable tee of the quality and kind herein specified shall be placed in the watermain opposite each of the fire hydrants and shall be connected with the hydrant by means of the valve and connecting pipe.

All hydrant bolts installed underground shall be 304 stainless steel t-bolts and nuts. Each hydrant shall have a stainless steel lower operating stem.

Each hydrant shall be provided with a drain that will leave no water standing in the barrel of the hydrant when the hydrant is closed. This drip shall close tightly before the hydrant begins to open. The hose and steamer connections shall be securely threaded and locked into the hydrant and each shall be provided with a suitable cast iron threaded cover fastened securely.

All fire hydrants, when noted, shall be equipped with an auxiliary valve and cast iron valve box, including a valve box stabilizer. The auxiliary valve shall be a six inch (6") valve. The pipe connecting the hydrant to the main shall be six inch (6") ductile iron water pipe (class 52) meeting the requirements contained in the special provision for DUCTILE IRON WATER MAIN.

Fire hydrants shall be the break flange type Clow Medallian F-2545 or Mueller Super Centurion A-423.

All hydrants and any required fittings shall receive one (1) coat of factory applied red paint as recommended by the manufacturer prior to final acceptance.

All cap chains shall be removed prior to hydrant installation.

2. Auxiliary Valves and Valve Box

Auxiliary valves shall be "resilient seat wedge valves" in accordance with the following: The valves shall come complete with a cast iron valve box and cover produced by the

same manufacturer producing the valve. The auxiliary valves shall be six (6) inches in diameter. Valve boxes shall be Tyler Union 6850 664S Type 26T Top, #60 Middle, and 36B Bottom sections. Valve stabilizers shall be VB Stabilizer from Alberico. The word "Water" shall be imprinted on the valve box cover (Mueller 1H-10360 or Clow 1F-2454). All valves shall be rated for 300 psi test pressure and 150 working pressure.

The auxiliary valve shall be attached directly to the hydrant with push joints or mechanical joints.

All valves shall be right hand turning.

Wedges shall be constructed of ductile iron, fully encapsulated in nitrite rubber except for guide and wedge nut areas.

Wedge rubber shall be molded in place and bonded to the ductile iron portion, and shall not be mechanically attached with screws, rivets, or similar fasteners.

Wedge shall seat against seating surfaces arranged symmetrically about the centerline of the operating stem, so that seating is equally effective regardless of direction of pressure unbalance across the wedge.

All seating surfaces in body shall be inclined to the vertical at a minimum angle of 32 degrees (when stem is in a vertical position) to eliminate abrasive wear of rubber sealing surfaces. The stem shall be sealed by at least two O-rings; all stem seals shall be replaceable with valve fully open and while subjected to full pressure. Waterway shall be smooth and shall have no depressions or cavities in seat area where foreign material can lodge and prevent closure or sealing.

Construction Methods. Each hydrant shall be set on a concrete thrust block not less than 24 inches by 24 inches by 4 inches in thickness. Within the disturbed area, CA-7 gravel shall be placed 3 foot above the weep hole with a geofabric placed on top of the gravel to prevent fines from the soil backfill from clogging the drain field.

All hydrants shall be set plumb and shall have their nozzles parallel with edge of pavement, the steamer connection shall be facing the edge of pavement. The height of the nut on a four and one-half inch (4 ½") steamer connection shall be no less than twenty four inches (24") or more than thirty six inches (36") above finished grade at the hydrant. All hydrant leads between the tee and the hydrant shall be a positively restrained connection.

The bowl of each hydrant shall be well braced against undisturbed earth at the end of trench with stone slabs or concrete backing.

Fire hydrant extensions shall only be used with the approval of the Engineer. Should fire hydrant extensions be required due to improper construction methods by the Contractor, the extensions will be installed but will not be measured for payment.

Auxiliary valves shall be installed in the vertical position, supported on a concrete pedestal. It shall be the Contractor's responsibility to assure that the finished elevation

of the box is flush with the adjacent proposed ground line. Valve box installation shall meet the requirements of Section 44 of the Standard Specifications for Water and Sewer Main Construction in Illinois.

All excavation around the fire hydrant and auxiliary valve shall be backfilled to the natural line or finished grade as rapidly as possible. The backfill material shall consist of CA-7 or trench backfill as herein specified. All backfill material shall be deposited in the excavation in a manner that will not cause damage to the fire hydrant or auxiliary valve. Any depressions which may develop within the area involved in a construction operation due to settlement of backfill material shall be filled in a manner consistent with standard practice.

If the new fire hydrant is added to an existing water main, the hydrant shall be installed within five to seven feet of the auxiliary valve.

Hydrant signs and posts shall be included with each fire hydrant as shown in the plans, and shall be located as directed by the Engineer.

Method of Measurement. The fire hydrant or fire hydrant with auxiliary valve and box complete and including all appurtenances, including the hydrant sign and signpost, shall be measured on a per each basis at each location.

Six (6) inch watermain connection pipe as specified shall not be measured for payment and shall be included in the cost of the fire hydrant or fire hydrant with auxiliary valve and valve box.

Basis of Payment. This work shall be paid for at the contract unit price per each for FIRE HYDRANT or FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX which price shall include furnishing and installing the fire hydrant with auxiliary valve and box, all labor, equipment, drainage stone, thrust block, ductile iron pipe, fittings, connections to the existing watermain, all appurtenances and backfilling necessary to complete the work.

## **DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED (VOS)**

Description. This item shall consist of the adjustment of existing Domestic Water Service Boxes to match the proposed surface grade, or as otherwise directed by the Engineer. In order to make the necessary adjustments, the Contractor may have to provide either slide-type or screw-type extensions for the existing facility. It shall be the responsibility of the Contractor to ascertain the type of existing facility, and the necessary extension piece required to perform the adjustment. The installation of the extension pieces or the proper manipulation of existing slide or screw type devices will be the only adjustment allowed, and the use of physical force to raise or lower the existing Domestic Water Service Boxes will not be permitted. This work shall be done to the satisfaction of the Engineer.

Basis of Payment. This item shall be paid for at the contract unit price each for DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED, which price shall include all labor, equipment and material.

**VALVE VAULTS, TYPE A, TYPE 1 FRAME, CLOSED LID (VOS)  
VALVE VAULTS TO BE ADJUSTED (VOS)  
VALVE VAULTS TO BE RECONSTRUCTED (VOS)**

Description. This work shall consist of furnishing and installing a precast concrete valve vault of the diameter specified at locations shown on the plans, in accordance with the details included and as directed by the Engineer.

Materials. Valve vaults are required for all valves greater than 6 inches or as otherwise called out on the plans. All castings for Valve Vaults shall be manufactured by Neenah R-1712 and stamped, "Village of Schaumburg — Water". If a valve controls the water supply to a sprinkler system, it shall be stamped "Village of Schaumburg — Water/Fire". All castings shall be heavy duty type. Manhole steps will not be required, except for those valve vaults where the depth (finish grade to top of water main) exceeds seven (7) feet.

Construction Methods. Vaults shall be built up so the cover and frame, when placed, will conform to the proper grade. Frame castings shall be set in full mortar beds on top of masonry. If the frame casting must be adjusted to meet the finished grade line requiring an adjustment of 2 inches or less, the final adjustment shall be provided with a High Density Polyethylene Manhole Adjusting Ring. All adjusting rings must be mortared together and must be mortared to the casting, as well as to the cone section of the structure. The maximum height of adjusting rings shall be 12 inches with no more than two total adjusting rings.

Basis of Payment. Payment for valve vaults shall be made at the contract unit price per each for VALVE VAULT, TYPE A, of the size specified, TYPE 1 FRAME, CLOSED LID. Payment shall be full compensation for the valve, precast concrete vault, frame and lid, hardware, all materials, labor, equipment, and other appurtenant items to complete this item as specified.

The cost of the frame and lid and final adjustment will not be paid for separately but shall be considered included in the cost of the valve vault. Granular backfill compacted around the valve vault will not be paid for separately but shall be considered included in the cost of the valve vault and installation.

When adjustment or reconstruction is specified and existing frames and lids are to be used, this work will be paid for at the contract unit price per each for VALVE VAULTS TO BE ADJUSTED or VALVE VAULTS TO BE RECONSTRUCTED.

## **WATER MAIN ABANDONMENT (VOS)**

Description. This work shall consist of the capping and abandonment of the existing watermain. When directed by the Engineer and the new watermain has been placed into service, this work is to be accomplished.

Construction Methods. When the new watermain has been installed, tested and placed into service, the Contractor shall excavate down to the existing watermain, work with the Village of Schaumburg Water Division (847.923.6612) to temporarily shut down the water system, cut into the existing watermain and cap both ends of the existing watermain. The caps shall be a fitting that is connected to sections of water main pipe by means of a positive restrained joint consisting of mechanical joints with retainer gland or Megalugs. Fittings shall be ductile iron meeting requirements of ANSI/AWWA C153/A21.10 and ANSI/AWWA C111/A21.11. Concrete thrust blocks shall be placed against the cap on the existing watermain to remain in service.

The Contractor shall backfill the excavation with CA-6 or appropriate backfill, as approved by the Engineer, to the existing grade elevation. The backfill shall be compacted in accordance with Section 550 of the "Standard Specifications" except that only Method 1 shall be used.

Basis of Payment. This work shall be paid for at the contract unit price per each for WATER MAIN ABANDONMENT, which price shall include all labor, equipment and material necessary to complete the work as specified herein.

## **TEMPORARY ACCESS ROAD (SPECIAL) (VOS)**

Description. This work shall consist of constructing, maintaining and removing paved temporary access for private and commercial entrances and side roads when directed by the Engineer.

General. When temporary aggregate access points are to remain for an extended period of time and only when directed by the Engineer, the Contractor shall construct and maintain temporary access composed of an HMA surface course over an existing aggregate temporary access. The top 2" of the existing aggregate temporary access should be removed and replaced with 2" of Hot-Mix Asphalt.

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

The paved temporary access shall be constructed to the dimensions and grades of the existing aggregate temporary access unless otherwise directed by the Engineer.

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

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

Method of Measurement. Paved temporary access for private and commercial entrances and roads will be measured for payment at the contract unit price per square yard for every private entrance, commercial entrance or road constructed for the purpose of providing a paved temporary access.

Basis of Payment. Paved temporary access for private and commercial entrances and roads will be paid for at the contract unit price per square yard for TEMPORARY ACCESS ROAD (SPECIAL).

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

(a) Upon construction of the paved temporary access, sixty percent of the contract unit price per square yard will be paid.

(b) Subject to the approval of the Engineer for the adequate maintenance and removal of the paved temporary access, the remaining forty percent of the pay item will be paid upon the permanent removal of the temporary access.

## **BIKE PATH REMOVAL (VOS)**

Description. This work shall consist of the removal and disposal of the existing hot-mix asphalt bike path, regardless of thickness, as directed by the Engineer. This work shall be performed in accordance with Section 440 of the Standard Specifications.

Method of Measurement. Bike path removal shall be measured for payment in place and the area computed in square yards.

Basis of Payment. This work will be paid for at the contract unit price per square yard for BIKE PATH REMOVAL.

## **DEWATERING (VOS)**

Description. This work shall consist of all labor, equipment, and materials necessary to construct, maintain, and remove dewatering systems to allow for construction in dry conditions. The dewatering method shall be designed to pass the 2-year, 24-hour storm event at a minimum.

General. The work shall be performed according to the following:

- The Contractor shall be responsible for the choice of products, equipment, design, installation, operation, and removal of the site dewatering work subject to review by the Engineer and North Cook County Soil and Water Conservation District. All products, equipment, and “means and methods” selected shall be adequate for the intended use/application. The Engineer’s review does not relieve the Contractor from compliance with the requirements specified herein.
- Dewatering shall be continuous 24 hours a day, seven days per week, for the duration of the project.
- The Contractor shall select the pumps, the rate at which the pumps discharge, and provide adequate protection at the pump discharge point subject to review by the Engineer.
- The Contractor shall ensure that downstream water quality is not impaired. The water shall be discharged with adequate erosion and sediment control protection of the surface at the point of discharge.
- Water pumped or drained from the work area shall be disposed of in a safe and suitable manner without damage to adjacent waterways; wetlands; adjacent property or streets; and/or to other work under construction.
- Water shall not be discharged into storm or sanitary sewers, or within 50 feet of wetland boundaries.
- Water shall be discharged to an upland area to allow filtration through vegetation.
- Any and all damages caused by dewatering the work area shall be promptly repaired by the Contractor.

Submittals. The Contractor shall submit to the Engineer for review a description of dewatering techniques and equipment to be used. The submittal shall include detail drawings showing the lengths of discharge piping; the point(s) of discharge; and the included sediment and erosion control procedures using Best Management Practices (BMPs).

Best Management Practices:

- Deep Sump Pits
- Pumps, Hoses, etc.
- Wellpoints
- Point Source Discharge Protection (Riprap with vegetative buffer, etc.)
- Flocculation Logs
- Flocculation Powder
- Erosion Control Blanket
- Rock Checks

- Ditch Checks
- Geotextile Fabric
- Dewatering Filter Bags
- Removal and proper disposal of all BMPs and sediment associated with dewatering
- Additional erosion and sediment control BMPs as per Engineer's direction

Method of Measurement. These items of work will be measured on a lump sum basis for furnishing, installing, maintaining, replacing, relocating and removing the dewatering systems required in the plans and these special provisions.

Basis of Payment. This work will be paid for at the contract unit price per lump sum for DEWATERING. The unit price shall include all equipment, labor and materials required to construct, maintain and remove the dewatering system.

### **SANITARY SEWER REMOVAL (VOS)**

Description. This work shall consist of the removal and disposal of existing gravity flow or pressure flow sanitary sewer pipe, regardless of the pipe material, at the locations shown on the plans or as directed by the Engineer. The removal of sanitary sewer pipes shall conform to Section 551 of the Standard Specifications for Road and Bridge Construction and the Standard Specifications for Water and Sewer Main Construction in Illinois, 7th edition.

Removal of sleeves on existing sanitary sewers shall be included in the cost of the sanitary sewer being removed.

Method of Measurement. This work will be measured for payment in place in feet.

Basis of Payment. This work will be paid for at the contract unit price per foot for SANITARY SEWER REMOVAL of the size specified.

### **PRECAST JUNCTION CHAMBER (VOS)**

Description. This work shall consist of the construction of junction chamber of precast reinforced concrete, together with the necessary precast reinforced concrete risers, steps, cast iron frames and grates or lids, manufactured and installed in place, at the locations shown on the plans and according to Sections 504 and 602 of the Standard Specifications, except as modified herein, and as directed by the Engineer. This work shall also include temporary soil retaining systems if required, restrictor plate and attachments and other items necessary to complete the work.

Submittals. Submittals shall include all shop drawings and when required design computations. The submittals shall address all details, dimensions, quantities, general notes, and cross sections necessary to construct the precast concrete junction chamber. The submittal shall be submitted to the Engineer for review and approval no later than 60 days prior to construction of the precast concrete junction chamber. Both



the design computations and shop drawings shall be prepared and sealed by an Illinois Licensed Structural Engineer. Shop drawings shall be prepared according to Article 1042.03(b).

Construction Requirements. The precast reinforced concrete junction chamber shall conform to the applicable requirements of Section 504 and 602 of the Standard Specifications and as herein specified.

To permit the proper compaction of the backfill material, the excavation shall be made to a horizontal distance extending at least 2 feet outside of the structure. No material shall be placed until after the Engineer has approved the depth of the excavation and the character and condition of the foundation material. The precast reinforced concrete sections shall be constructed, sealed and installed on a sand cushion in accordance to Article 602.07 of the Standard Specifications. Backfill material, conforming to the requirements of Section 209, shall be placed at the space between the sides of the excavation and the outer surfaces of the junction chamber, as shown on the plans. All backfilling material shall meet the approval of the Engineer.

Precast reinforced concrete risers, when required, shall conform to the requirements of AASHTO M199 and shall have a minimum thickness of 6 inches (150 mm).

Frames and grates or lids shall conform to the requirements of Articles 1006.15 and 604 of the Standard Specifications. Steps shall be cast gray iron conforming to Articles 1006.14 and 602.08 of the Standard Specifications and shall be embedded into the wall a minimum of 3 inches (75 mm) and shall not be extended on the outside. Steps shall be omitted when the depth of the junction chamber is 5 feet (1.5 m) or less.

Basis of Payment. This work will be paid for at the contract unit price per each for PRECAST CONCRETE JUNCTION CHAMBER, which price shall include all excavation and backfill (except excavation in rock) and furnishing and installing the specified frames and grates or lids, steps, precast concrete risers, sand cushion, porous granular backfill, temporary soil retention system if required, and the entire structure complete in place.

## **EXPLORATION TRENCH, SPECIAL (VOS)**

Description. This item shall consist of excavating a trench at locations designated by the Engineer for the purpose of locating existing tile lines or other underground facilities within the limits of the proposed improvement. The trench shall be deep enough to expose the line but not more than one foot deeper than the line, and the width of the trench shall be sufficient to allow proper investigation to determine if the line needs to be relocated or replaced.

The exploration trench shall be backfilled with gradation CA 6 stone, the cost of which shall be included in the item of EXPLORATION TRENCH, SPECIAL.

Basis of Payment. This work will be paid for at the contract unit price per foot for EXPLORATION TRENCH, SPECIAL, regardless of the depth required, and no extra

compensation will be allowed for any delays, inconveniences or damages sustained by the Contractor in performing the work.

## **EROSION CONTROL BLANKET (SPECIAL)**

This Special Provision revises Section 251 of the Standard Specifications for Road and Bridge Construction to eliminate the use of Excelsior Blanket for Erosion Control Blanket (Special).

This work shall consist of furnishing, transporting, and placing 100 % biodegradable erosion control blanket over seeded areas as detailed on the plans, according to Section 251 except as modified herein.

Delete Article 1081.10(a) Excelsior Blanket.

Delete the first paragraph of Article 1081.10 (b) Knitted Straw Mat and substitute the following:

Knitted Straw Mat. Knitted straw mat shall be a machine-produced mat of 100% clean, weed free agricultural straw. The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the blanket. The blanket shall be covered on top and bottom sides with a 100% biodegradable woven natural organic fiber netting. No plastic netting will be allowed. The netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine stands that are loose-weave with movable joints, not welded or fixed, to form an approximate 0.50 x 1.0 (1.27 x 2.54 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches (5-12.5cm) from the edge) as an overlap guide for adjacent mats.

Short-term photodegradable erosion control blanket will not be allowed.

Delete Article 1081.10(d) Wire Staples.

Add the following to Article 1081.10 (e) Wood Stakes:

Biodegradable plastic stakes will be allowed. The biodegradable plastic anchor shall be approximately 6 in (15.24 cm) in length. No metal wire stakes will be allowed.

Method of Measurement. Erosion control blanket will be measured for payment in square yards.

Basis of Payment. This work will be paid for at the contract unit price per square yard for EROSION CONTROL BLANKET (SPECIAL).

## **AGGREGATE SURFACE COURSE FOR TEMPORARY ACCESS**

Effective: April 1, 2001

Revised: January 2, 2007

Revise Article 402.10 of the Standard Specifications to read:

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

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

- (a) Private Entrance. The minimum width shall be 12 ft (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 9 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 9 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 of according to Article 202.03.”

Add the following to Article 402.12 of the Standard Specifications:

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

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

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

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

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

**PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH, SPECIAL (VOS)**

Description. This work shall consist of the construction of Portland Cement Concrete driveways at the locations designated on the plans in accordance with Section 423 of the Standard Specifications.

Materials. Materials shall comply with the requirements of Sections 1006, 1020 and 1051 of the Standard Specifications for Class PV concrete.

Construction Method. The driveway shall be poured to a thickness of 8”. The existing aggregate subbase shall be replaced with 2” of Subbase Granular Material, Type B. The subbase shall paid for separately as SUBBASE GRANULAR MATERIAL, TYPE B 2”.

6 inch X 6 inch - #6 welded wire mesh shall be placed 3” below the surface of the concrete.

All forming shall be with 2" x 8" lumber or approved metal forms except within areas of driveway radii where 1" x 6" lumber shall be utilized.

The Contractor shall machine saw a perpendicular joint between that portion of a driveway to be removed and that which is to remain in place. If the Contractor removes or damages the existing driveway or parking area outside the limits designated by the Engineer for removal and replacement, he will be required to repair or replace that portion at his own expense to the Engineer’s satisfaction. All required excavation shall be included in the contract unit price for this item. Removal of the existing driveway pavement will be paid for separately.

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

Basis of Payment. This work will be paid for at the contract unit price per square yard for PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH, SPECIAL

Removal of the existing driveway pavement shall be paid for per square yard as DRIVEWAY PAVEMENT REMOVAL.

## **DETECTABLE WARNINGS (SPECIAL) (VOS)**

Article 424.09. Append the article with the following:

“The vitrified polymer composite surface applied detectable/tactile warning surface tile shall be ‘Armor-Tile’, as manufactured by Engineering Plastics Inc. (800-682-2525).”

Article 424.13. Replace the second sentence with the following:

“Detectable warnings will be paid for at the contract unit price per square foot for DETECTABLE WARNINGS (SPECIAL)”.

## **WATER MAIN REMOVAL (VOS)**

Description. This work shall consist of removing previously abandoned water main that is conflict with the proposed improvements or as directed by the Engineer. Work shall conform to the applicable portions of Section 551 and Section 605 of the Standard Specifications. The contractor shall cut and remove the minimum amount of pipe necessary to construct the proposed improvements. The Engineer shall approve the limits of removal prior to cutting of the main. The ends of the cut main shall be capped. The caps shall be a fitting that is connected to sections of water main pipe by means of a positive restrained joint consisting of mechanical joints with retainer gland or Megalugs. Fittings shall be ductile iron meeting requirements of ANSI/AWWA C153/A21.10 and ANSI/AWWA C111/A21.11.

Removal of sleeves on existing water main shall be included in the cost of the water main being removed. The ends of the sleeve shall be plugged in a manner meeting the approval of the Engineer.

The Contractor shall backfill the excavation with CA-6 or appropriate backfill, as approved by the Engineer, to the existing grade elevation. The backfill shall be compacted in accordance with Section 550 of the "Standard Specifications" except that only Method 1 shall be used.

Method of Measurement. This work will be measured for payment for removal in feet.

Basis of Payment. This work will be paid for at the contract unit price per foot for WATER MAIN REMOVAL, regardless of the size of the existing main. This price shall include all labor, equipment, materials, excavation, removal and disposal of the pipe, backfill with suitable excavated materials and aggregate as needed and disposal of all surplus material.

## **STORM SEWERS, PIPE UNDERDRAINS, SANITARY SEWERS, AND WATERMAIN (VOS)**

Whenever during construction operations any loose material is deposited in the flow line of drainage structures such that the natural flow of water is obstructed, it shall be removed at the close of each working day. At the conclusion of construction operations, all utility structures shall be free from dirt and debris. The cost of all materials required and all labor necessary to comply with these provisions will not be paid for separately, but shall be considered as included in the cost of the storm sewers installed and drainage structures installed, adjusted, or reconstructed as part of this project.

The Contractor shall furnish all labor, equipment and material necessary for dewatering trench excavations as well as shoring trench walls during utility operations. The cost to comply with the above shall be included in the cost of the storm sewers, drainage structures, valve vaults, watermain, and fire hydrants installed as part of this project.

The cost of making storm sewer connections to existing or proposed storm sewer or drainage structures shall be included in the cost of the storm sewer or drainage structure being constructed.

Removal of sleeves on existing storm sewers shall be included in the cost of the storm sewer being removed.

When existing drainage facilities are disturbed, the Contractor shall provide and maintain temporary outlets and connections for all private or public drains, sewers or catch basins. The Contractor shall provide facilities to take in all storm water which will be received by these drains and sewers and discharge the same. The Contractor shall provide and maintain an efficient pumping plant, if necessary, and a temporary outlet. The Contractor shall be prepared at all times to dispose of the water received from temporary connections until such time as the permanent connections with sewers are built and in service. This work will not be paid for separately, but shall be included in the cost of the storm sewers and drainage structures installed as part of this project.

Top of frame ("rim") elevations given on the plans are only to assist the Contractor in determining the approximate overall height of each structure. Frames on all new structures shall be adjusted to the final elevations of the areas in which they are located. This work will not be paid for separately, but shall be included in the cost of the drainage structures installed as part of this project.

Unless otherwise noted on the plans, the existing drainage facilities shall remain in use during the period of construction. Locations of existing drainage structures and sewers as shown on the plans are approximate. Prior to commencing work the Contractor shall determine the exact locations of existing structures which are within the proposed construction limits.

During construction, the Contractor encounters or otherwise becomes aware of any sewers, underdrains, or field drains within the right-of-way other than those shown on the plans, he shall so inform the Engineer, who shall direct the work necessary to

maintain or replace the facilities in service and to protect them from damage during construction if maintained. Existing facilities to be maintained that are damaged because of the non-compliance with this provision shall be replaced at the Contractor's own expense. Should the Engineer have directed the replacement of a facility, the necessary work and payment shall be in accordance with Sections 550 and 601, and Article 104.02 of the Standard Specifications.

The Contractor shall determine when flat slab tops are required on manholes and catch basins. No additional compensation shall be allowed for the use of flat slab tops.

The Contractor shall be aware that at times the Engineer may require a change in storm sewer elevation due to a utility line or other obstruction. If such a grade change does not alter the pipe classification, the additional excavation, backfill, and sheeting required shall be included in the cost of the storm sewer being installed. If the revised grade results in a change in pipe classification, payment will be made for the revised type of storm sewer.

Pipe underdrains shall be installed according to Section 601 of the Standard Specifications and IDOT Highway Standard 601001-05. Top of pipe underdrains shall be placed a minimum of 6" below the Aggregate Subgrade improvement layer. The cost of making pipe underdrain connections to drainage structures shall be include in the cost of Pipe Underdrains, of the type specified.

**CATCH BASINS, WITH SPECIAL FRAME AND GRATE (VOS)  
MANHOLES, WITH SPECIAL FRAME AND GRATE (VOS)  
INLETS, WITH SPECIAL FRAME AND GRATE, SPECIAL (VOS)**

Description. This work shall be performed in accordance with the applicable portions of Section 602 except as follows:

Special frames and grates for structures listed on the plans as being on-grade within B-6.12 curb and gutter shall consist of Neenah R-3281-AR with an open curb box.

Special frames and grates for structures listed on the plans as being in a low point location within B-6.12 curb and gutter shall consist of Neenah R-3281-A with an open curb box.

Special frames and grates for structures listed on the plans as being on-grade within B-6.18 curb and gutter shall consist of Neenah R-3278-AR with an open curb box.

Special frames and grates for structures listed on the plans as being in a low point location within B-6.18 curb and gutter shall consist of Neenah R-3278-A with an open curb box.

The words "Dump No Waste" and "Drains to Waterways" shall be cast into the top of the curb box.

Basis of Payment. When new construction is specified, this work will be paid for at the contract unit price per each for CATCH BASINS or MANHOLES, of the type or type and diameter specified, WITH SPECIAL FRAME AND GRATE, or INLETS, of type specified, WITH SPECIAL FRAME AND GRATE, SPECIAL.

**MANHOLES, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID, SPECIAL (VOS)**

Description. This work shall be performed in accordance with the applicable portions of Section 602 and the Highway Standards referenced in the plans, except as follows:

The height of the frame shall 6".

Basis of Payment. This work will be paid for at the contract unit price per each for MANHOLES, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID, SPECIAL.

**SANITARY MANHOLES TO BE ADJUSTED (VOS)  
SANITARY MANHOLES TO BE RECONSTRUCTED (VOS)  
SANITARY MANHOLES TO BE RECONSTRUCTED WITH NEW TYPE 1  
FRAME, CLOSED LID (VOS)**

Description. This work shall consist of adjusting or reconstructing existing sanitary manholes at locations indicated on the plans. This work shall be performed in accordance with Section 602 of the Standard Specifications with the following addition:

A new external chimney seal which fully encompasses the rings and castings shall be installed after the frame has been adjusted to the final elevation. The external chimney shall be the Classic External Chimney Seal manufactured by Cretex.

The manhole lid shall be rotated out of the proposed sidewalk as much as possible, as determined by the Engineer.

Basis of Payment. This work shall be measured and paid for at the contract unit price per each for SANITARY MANHOLES TO BE ADJUSTED, SANITARY MANHOLES TO BE RECONSTRUCTED, or SANITARY MANHOLES TO BE RECONSTRUCTED WITH NEW TYPE 1 FRAME, CLOSED LID which price shall include all labor, equipment, and materials necessary to perform said work.

**VALVE VAULTS TO BE REMOVED (VOS)**

Description. This work shall consist of removing existing water valve vaults. This work shall be performed in accordance with Section 605 of the Standard Specifications with the following modifications:

Construction Methods. At locations where the existing watermain is to be abandoned, the Contractor shall excavate around existing vaults to remove the top barrel sections



leaving only the section with the existing valve. The existing valve shall be closed and the remaining barrel section shall be filled with sand and the sand compacted. The hole formed by removal of the structure shall also be backfilled with sand and the sand compacted.

At locations where the existing watermain is to remain, the Contractor shall fully remove the existing structure.

Compaction shall be in accordance with Section 550 of the Standard Specifications except that only Method 1 shall be allowed.

The barrel sections that have been removed shall be hauled offsite and disposed of in an appropriate and approved location. Frames and lids shall be delivered to the Village's Public Works facility at 714 S. Plum Grove Road, Schaumburg, IL.

Basis of Payment. This work shall be paid for at the contract unit price per each for VALVE VAULTS TO BE REMOVED, which price shall include all labor, equipment, and material necessary to complete the work as specified herein.

### **CONCRETE CURB (SPECIAL) (VOS)**

Description. This work shall consist of constructing concrete curbs attached to existing concrete box culverts at the locations shown on the plans and in accordance with the detail included in the plans.

Reinforcement bars shall conform to the requirements of Section 508 and Article 1006.10 of the Standard Specifications. Portland cement concrete shall conform to Article 1020 of the Standard Specifications for Class SI concrete.

The curb shall be tied to the concrete box culvert in accordance with Article 509.06 of the Standard Specifications. Forming and placement of the concrete curbs shall be in accordance with Section 606 of the Standard Specifications.

Method of Measurement. Concrete curb will be measured for payment in feet along the face of concrete curb.

Basis of Payment. This work will be paid for at the contract unit price per foot for CONCRETE CURB (SPECIAL), which price shall include all labor, equipment, and material necessary to complete the work as specified.

### **SIGN PANEL – TYPE 1 (SPECIAL) (VOS)**

Description. This work shall consist of furnishing, fabricating, and /or installing telescoping steel sign supports in accordance with Section 720 of the Standard Specification with the following modifications:

The sheeting shall be Diamond Grade DG3 Reflective Sheeting Series 4000 manufactured by 3M.

Method of Measurement. Sign panels will be measured for payment in square feet according to Article 720.03.

Basis of Payment. This work will be paid for at the contract unit price per square foot for SIGN PANEL – TYPE 1 (SPECIAL).

### **TELESCOPING STEEL SIGN SUPPORT (SPECIAL) (VOS)**

Description. This work shall consist of furnishing and installing telescoping steel sign supports for ground-mounted signs utilizing a telescoping base section in accordance with Section 728 of the Standard Specification with the following modifications:

The sign supports shall meet the requirements shown in the detail contained within the plans.

Method of Measurement. Sign supports will be measured for payment in feet. The length measured will be the total length of all sections installed, except for any internal splice members and any telescoping of a top section more than 12 inches into a base section.

Basis of Payment. This work will be paid for at the contract unit price per foot for TELESCOPING STEEL SIGN SUPPORT (SPECIAL).

### **CONNECTIONS TO EXISTING WATER MAINS (NON-PRESSURE) (VOS)**

Description. This work shall consist of the connection of new water main, fire hydrant leads, and valves to existing water main that can be shut down.

Materials. Water main and fitting shall conform to the special provisions for DUCTILE IRON WATER MAIN. The work includes ductile iron pipe (of the diameter of the existing watermain) and fittings. Trench backfill shall meet the requirement for CA-6 listed in Article 1004.01.

Construction Requirements. Where the connection of new work and old require interruption of services and notification of customers affected, the superintendent of the Utility (Village), the Engineer and the Contractor shall mutually agree upon a date and time for connections which will allow ample time to assemble labor and materials, and to notify all customers affected. Customers shall be notified at least 48 hours prior to being taken out of service. Shut-downs may only be possible during off-hours or on weekends. No additional compensation shall be due to the Contractor for work during these times.

Valves on existing mains shall not be operated by the Contractor (unless otherwise authorized by the Village), and will be closed and opened only by the employees of the Village's Water Department.

The Contractor shall expose the water main to be connected and shall confirm the size and type of piping present. The Contractor shall obtain the necessary materials required to make a proper connection. The Contractor shall not proceed until he has all the required materials on site. The Contractor shall limit the time for interconnections to four (4) hours. In no case shall a customer(s) be out of service overnight.

Connections shall be accomplished by the use of mechanical joint fittings and lengths of pipe to make the most direct vertical and horizontal adjustment necessary to complete the connection. This may include cut-ins to the existing main or connections to existing valves or fittings. The new main shall be disinfected in accordance with the DUCTILE IRON WATER MAIN special provision.

Once the new water mains have been tested and approved for service then the Contractor shall, under the direction of the Engineer and Village, place the new water main in service.

Basis of Payment. This work will be paid for at the contract unit price each for CONNECTIONS TO EXISTING WATER MAIN (NON-PRESSURE) of the size of the main being connected, which price shall include all equipment, labor, sleeves, fittings, trench backfill, connecting pipe, rounded stone bedding and other materials not listed for payment for separately, required to make proper connections of the existing water mains to the proposed water mains. Any water main required to complete the connection on the existing water main (adjacent to the tee or sleeve) shall be included in the cost of CONNECTIONS TO EXISTING WATER MAIN (NON-PRESSURE). Dewatering, if required, shall be considered included in the cost of CONNECTIONS TO EXISTING WATER MAIN (NON-PRESSURE).

## **CONCRETE WASHOUT FACILITY**

Description. The Contractor shall take sufficient precautions to prevent pollution of streams, lakes, reservoirs, and wetlands with fuels, oils, bitumens, calcium chloride, or other harmful materials according to Article 107.23 of the "Standard Specifications".

General. To prevent pollution by residual concrete and/or the by-product of washing out the concrete trucks, concrete washout facilities shall be constructed and maintained on any project which includes cast-in-place concrete items. The concrete washout shall be constructed, maintained, and removed according to this special provision. Concrete washout facilities shall be required regardless of the need for NPDES permitting. ON projects requiring NPDES permitting, concrete washout facilities shall also be addressed in the Storm Water Pollution Prevention Plan.

The concrete washout facility shall be constructed on the job site in accordance with Illinois Urban Manual practice standard for Temporary Concrete Washout Facility (Code 954). The Contractor may elect to use a pre-fabricated portable concrete washout

structure. The Contractor shall submit a plan for the concrete washout facility, to the Engineer for approval, a minimum of 10 calendar days before the first concrete pour. The working concrete washout facility shall be in place before any delivery of concrete to the site. The Contractor shall ensure that all concrete washout activities are limited to the designated area.

The concrete washout facility shall be located no closer than 50 feet from any environmentally sensitive areas, such as water bodies, wetlands, and/or other areas indicated on the plans. Adequate signage shall be placed at the washout facility and elsewhere as necessary to clearly indicate the location of the concrete washout facility to the operators of concrete trucks.

The concrete washout facility shall be adequately sized to fully contain the concrete washout needs of the project. The contents of the concrete washout facility shall not exceed 75% of the facility capacity. Once the 75% capacity is reached, concrete placement shall be discontinued until the facility is cleaned out. Hardened concrete shall be removed and properly disposed of outside the right-of-way. Slurry shall be allowed to evaporate, or shall be removed and properly disposed of outside the right-of-way. The Contractor shall immediately replace damaged basin liners or other washout facility components to prevent leakage of concrete waste from the washout facility. Concrete washout facilities shall be inspected by the Contractor after each use. Any and all spills shall be reported to the Engineer and cleaned up immediately. The Contractor shall remove the concrete washout facility when it is no longer needed.

Basis of Payment. The cost of all materials required and all labor necessary to comply with the above will be paid for at the lump sum price for CONCRETE TRUCK WASHOUT. The unit price shall include all labor, equipment and materials necessary to complete the work, regardless of the number washout facilities required.

## **REMOVE AND REPLACE LAWN SPRINKLER SYSTEM (VOS)**

Description. Work under this item shall consist of removing and replacing portions of a lawn sprinkler system that is required to be replaced as a result of construction operations and not as a result of Contractor negligence.

The Contractor shall determine all existing lawn sprinkler systems that are proposed to be relocated and replaced in the presence of the Engineer. The Contractor shall take all necessary precautions to protect existing lawn sprinkler systems that are to remain in place. The Contractor shall replace only that portion of the lawn sprinkler system that is required by legitimate construction operations and approved by the Engineer. The replacement sections of the lawn sprinkler system shall be compatible with the existing system. The Engineer shall approve locations of the replacement appurtenances prior to demolition activities. Once the replacement sprinklers are replaced and have been tested by the Contractor in the presence of the Engineer, the item will be measured for payment.

The Contractor shall be responsible for coordinating all work involving the sprinkler systems with the business owners. The Contractor shall obtain written approval of any relocations or repairs from the Engineer prior to final payment.

Method of Measurement. This work shall be measured for payment in feet of sprinkler system replaced.

Basis of Payment. This work shall be paid for at the contract unit price per foot for REMOVE AND REPLACE LAWN SPRINKLER SYSTEM in accordance with the plans and as described herein for all materials (including sprinkler heads and valves) and labor necessary to complete the work.

### **DROP SANITARY MANHOLES, 4' DIAMETER TYPE 1 FRAME, CLOSED LID (VOS)**

Description. This work shall consist of constructing 4'-diameter sanitary manholes with exterior drop connections at the locations identified on the plans at the direction of the Engineer.

General. This work shall be performed in accordance with the Section 602 of the "Standard Specifications" and the details included in the plans.

A new external chimney seal which fully encompasses the rings and castings shall be installed after the frame has been adjusted to the final elevation. The external chimney shall be the Classic External Chimney Seal manufactured by Cretex.

Leakage testing of all manholes for water tightness shall be in accordance with ASTM C969-94 "Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines" or ASTM C1244-93 "Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test" prior to placing into service

Basis of Payment. This work will be paid for at the contract unit price each for DROP SANITARY MANHOLES, 4' DIAMETER TYPE 1 FRAME, CLOSED LID.

### **SANITARY MANHOLES TO BE RECONSTRUCTED (SPECIAL) (VOS)**

Description. This work shall consist of reconstructing an existing drop sanitary manhole in order to eliminate the drop connection.

General. The Contractor shall excavate around existing sanitary manholes to remove the top barrel sections, leaving only the section or sections with the bottom openings. The exterior drop connection, including any concrete encasement, shall be removed to an elevation below the proposed inverts. New barrel and cone sections shall be installed in accordance with Article 602.07 of the Standard Specifications. The existing frame and lid shall be re-installed.

The hole formed by removal of the structure shall be backfilled with sand and the sand compacted. Compaction shall be in accordance with Section 550 of the Standard Specifications except that only Method 1 shall be allowed.

The barrel sections and exterior drop connection shall be hauled offsite and disposed of in an appropriate and approved location.

A new external chimney seal which fully encompasses the rings and castings shall be installed after the existing frame has been adjusted to the final elevation. The external chimney shall be the Classic External Chimney Seal manufactured by Cretex.

Basis of Payment. This work will be paid for at the contract unit price each for SANITARY MANHOLES TO BE RECONSTRUCTED (SPECIAL).

**PAVEMENT MARKING (SPECIAL) (VOS)**

Description. This work shall include furnishing and installing interconnected preformed thermoplastic pavement markings per Section 780 and as described herein.

Materials. The material must be a resilient preformed thermoplastic product which contains a minimum of thirty percent (30%) intermixed anti-skid/anti-slip elements and where the top surface contains anti-skid/anti-slip elements. These anti-skid/anti-slip elements must have a minimum hardness of 8 (Mohs scale) and meet the following gradation:

Size Gradation		Intermix		Drop - On	
US Mesh	µm	Retained, %	Passing, %	Retained, %	Passing, %
10	2000	0 - 10%	90 - 100%		
12	1700	5 - 25%	75 - 95%		
14	1400	15 - 50%	50 - 85%		
16	1180	15 - 50%	50 - 85%	0 - 5%	95 - 100%
18	1000	10 - 30%	70 - 90%	0 - 10%	90 - 100%
20	850	0 - 5%	95 - 100%	5 - 25%	75 - 95%
25	710	0 - 2%	98 - 100%	15 - 50%	50 - 85%
30	600			15 - 50%	50 - 85%
35	500			5 - 25%	75 - 95%
40	425			0 - 10%	90 - 100%

The material must be resistant to the detrimental effects of motor fuels, antifreeze, lubricants, hydraulic fluids, and other motor vehicle fluids.

The material shall be capable of being applied on hot-mix asphalt and/or portland cement concrete pavements primarily by the use of an infrared heater supplied by the material manufacturer. A handheld propane heat torch supplied by the material manufacturer may be used in isolated areas. The use of a compactor or similar equipment shall not be necessary. The material must be able to be applied to asphalt and concrete surfaces without preheating the application surface to a specific temperature. The material must be capable of being affixed to green concrete (concrete that has set but not appreciably hardened). The material shall not require the portland cement concrete application areas to be cured or dried out.

The material must be capable of conforming to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures. It shall not be necessary to use a grid template or to make pattern grooves or other indentations in the asphalt or concrete surface prior to applying the material. It shall not be necessary to inlay the material in grooves or indentations. It shall not be necessary to heat the pavement or application surface to a specific temperature.

The material is typically supplied in segments measuring 24 in. by 24 in. The material must be factory assembled and interconnected with a compatible material, so that it is unnecessary to assemble the individual "brick" pieces at the jobsite. Certain 24 in. by 24 in. material segments may be rotated to create additional pattern options using standard parts.

Interchangeable, patterned borders shall be available in either 8 in. or 12 in. wide by 24 in. long sizes, to allow flexibility in design options using standard parts.

The material must be able to be applied in temperatures down to 45°F (7.2°C) without any special storage, preheating or treatment of the material before application.

The material must be able to be applied to asphalt and concrete surfaces without using a grid template and without forming a pattern in the pavement substrate. Heating indicators must be evenly distributed on the surface of the material in order to ensure correct application.

The material must cover the entire application area and be flush across the surface. Once applied, no part of the pavement surface should be visible in the application area.

Material must be composed of an ester modified rosin impervious to degradation by motor fuels, lubricants, etc. in conjunction with aggregates, pigments, binders, and anti-skid/anti-slip elements. Pigments and anti-skid/anti-slip elements must be uniformly distributed throughout the material. The thermoplastic material conforms to AASHTO designation M249, with the exception of the relevant differences due to the material being supplied in a preformed state, being non-reflective, and potentially being of a color different from white or yellow.

Pigments:

White: The material shall be manufactured with sufficient titanium dioxide pigment to meet FHWA Docket No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected.

Red, Blue, and Yellow: The material shall be manufactured with sufficient pigment to meet FHWA Docket No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected. The pigment system must not contain heavy metals nor any carcinogen, as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.

Other Colors: The pigment system must not contain heavy metals nor any carcinogen, as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.

Heating indicators: The top surface of the material shall have regularly spaced indents. These indents shall act as a visual cue during application that the material has reached a molten state allowing for satisfactory adhesion and proper embedment of anti-skid/anti-slip elements, and a post-application visual cue that the application procedures have been followed.

Skid Resistance: The surface of the preformed thermoplastic material shall contain factory applied anti-skid material with a minimum hardness of 8 (Mohs scale). Upon application the material shall provide a minimum skid resistance value of 60 BPN when tested according to ASTM E 303.

Slip Resistance: The surface of the preformed thermoplastic material shall contain factory applied anti-skid material with a minimum hardness of 8 (Mohs scale). Upon application the material shall provide a minimum static friction of coefficient of 0.6 when tested according to ASTM C 1028 (wet and dry), and a minimum static coefficient of friction of 0.6 when tested according to ASTM D 2047.

Thickness: The material must be supplied at a minimum thickness of 125 mil (3.18mm).

Environmental Resistance: The material must be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

Interconnected: The material must consist of interconnected individual pieces of preformed thermoplastic pavement marking material, which through a variety of colors and patterns, make up the desired design. The individual pieces in each material segment, typically 24 in. (61cm) by 24 in. (61cm), must be factory assembled and interconnected with a compatible material so that in the field it is not necessary to assemble the individual pieces within a material segment. Multiple patterned border segment options shall be available in the material in either 8 in. (20cm) or 12 in. (30cm) wide by 24 in. (61cm) long sizes.



Manufacturing control and ISO certification. The manufacturer must be ISO 9001:2008 certified for design, development and manufacturing of preformed thermoplastic, and provide proof of current certification.

Application. Manufacturer Certified Applicator Requirement: The material shall be supplied and applied only by an applicator certified by the material manufacturer. The applicator shall provide proof of current certification before commencing work. The Certified Applicator shall follow the material manufacturer's current published application procedures.

Asphalt: The material shall be applied primarily by using an infrared heater supplied by the material manufacturer. A handheld propane heat torch supplied by the material manufacturer may be used in isolated areas. The material must be able to be applied at ambient and road temperatures down to 45°F (7.2°C) without any preheating of the pavement to a specific temperature. A sealer specified and supplied by the material manufacturer must be applied to the substrate prior to material application to ensure proper adhesion, and to provide bond reinforcement for larger volumes of material. The sealer must be supplied by the material manufacturer in 300/600ml cartridges along with sealer application supplies. A thermometer shall not be required during the application process. The pavement shall be clean, dry and free of debris. The supplier must provide current application instructions to the Certified Applicator.

Portland Cement Concrete: The same application procedure shall be used as described for Asphalt.

The specified pattern for installation shall be Ennis-Flint TrafficPatterns, Herringbone pattern, Brick Red color, with Grey grout. Outside edge consists of Soldier course brick pattern of the same color, also with Grey grout. A 12" White color preformed thermoplastic stripe of the same specified material shall be placed outside of the patterned installation.

Method of Measurement. This work shall be measured in square feet installed.

Basis of Payment. This work shall be paid for at the contract unit price per square foot for PAVEMENT MARKING (SPECIAL), which shall include all labor, equipment and materials as described within and as necessary to complete this work.

## **DRILL AND GROUT TIE BARS (VOS)**

Description. This item shall consist of furnishing and installing tie bars at locations where proposed concrete base course, pavement, curb and gutter or median abuts existing concrete pavement or base course, at locations shown on the plans and/or as directed by the Engineer.

For bars between the existing concrete base and the proposed curb and gutter, median or base course widening, the bars shall be epoxy-coated, deformed 24" long, conforming to Article 1006 of the "Standard Specifications". The grout shall be either as specified in

Article 1024.01 of the "Standard Specifications" or one of the approved chemical adhesives as listed by the I.D.O.T. Bureau of Materials and Physical Research, except that epoxy adhesive will not be allowed.

The bars shall be located on 36" centers with 8" minimum embedment. Individual bar locations shall be shifted at least 5 inches away from existing cracks, joints or unsound concrete. Holes for the bars shall be drilled with equipment suitable for this purpose to a diameter large enough to allow grouting around the bar. The grout shall be allowed to cure before the new abutting concrete is poured.

Basis of Payment. This work will be paid for at the contract unit price each for DRILL AND GROUT TIE BARS, of the size specified.

### **TEMPORARY INFORMATION SIGNING**

Effective: November 13, 1996

Revised: January 2, 2007

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:

Item	Article/Section
a. Sign Base (Notes 1 & 2).....	1090
b. Sign Face (Note 3).....	1091
c. Sign Legends.....	1092
d. Sign Supports.....	1093
e. Overlay Panels (Note 4).....	1090.02

Note 1. The Contractor may use 5/8-inch instead of 3/4-inch plywood.

Note 2. Type A sheeting can be used on the plywood base.

Note 3. All sign faces shall be Type A except all orange signs shall meet the requirements of Article 1106.01.

Note 4. The overlay panels shall be 0.08-inch thick.

### **GENERAL CONSTRUCTION REQUIREMENTS**

Installation. The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Articles 701.14 and 720.04. The signs shall

be 7 feet above the near edge of the pavement and shall be a minimum of 2 feet beyond the edge of the paved shoulder. A minimum of 2 posts shall be used.

The attachment of temporary signs to existing sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

Signs which are placed on overhead bridge structures shall be fastened to the handrail with stainless steel bands. These signs shall rest on the concrete parapet where possible. The Contractor shall furnish mounting details for approval by the Engineer.

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.

## **PRESSURE CONNECTION (VOS)**

Description. This work shall consist of installing a valve in a five foot diameter vault under pressure on the existing water main when directed by the Engineer so as not to disrupt service to the existing main. The connection shall be constructed in accordance with all applicable portions of Section 561 of the "Standard Specifications" and Section 46 of the "Standard Specifications of Water and Sewer Main Construction in Illinois".

### Materials.

- 1) The MJ tapping sleeve shall meet or exceed all material specifications as listed below and be suitable for use with standard mechanical joint and mechanical joint resilient wedge gate valves per ANSI/AWWA C609-94. The mechanical joint outlet shall be a one-piece 304 stainless steel casting having a plain end and a mechanical joint gland TIG and MIG welded a full 360 degrees.
- 2) The tapping sleeve shall have a Mechanical Joint Outlet Gasket, Branch Sealing Gasket, and complete Circle Gasket attached to the sleeve at the factory.
- 3) The Branch Sealing Gasket and Complete Circle Gasket shall be contained within stainless steel Retaining Rings.
- 4) The tapping sleeve shall incorporate Drop-in, Square-Neck, Track-Head bolts with a minimum of two (2) longer starter bolts.
- 5) A minimum quantity of 16 drop-in bolts and 6 mechanical joint outlet 304 stainless steel bolts shall be provided.

- 6) The Branch opening shall be larger in diameter than nominal to allow the use of a full size cutter.
- 7) All welding shall be passivated so as to return the welded stainless steel to its original corrosion resistant state.
- 8) There shall be no Paper or Plastic adhesive labels attached to the tapping sleeve, any information appearing on the sleeve shall be stenciled.
- 9) The tapping sleeve shall be Factory Hydrostatically Tested on pipe to a minimum of 300 psi to verify proper fit and weld integrity with zero leakage allowed.
- 10) Sleeves shall be Cascade or Mueller stainless steel tap sleeve with mechanical joint outlet.

#### Material Specifications

- 1) The shell shall be 304 (18-8) stainless steel.
- 2) Mechanical joint outlet gland and plain end shall be per ANSI / AWWA – Clio I A21.10 as applicable and cast of 304 (18-8) stainless steel.
- 3) The Armor Plate shall be 304 (18-8) stainless steel.
- 4) The Lugs shall be 304 (18-8) stainless steel. The Lugs shall be welded (GMAW) to the shell.
- 5) The Nuts shall be Heavy-Hex, of 304 (18-8) stainless steel and lubricated to prevent galling or seizing.
- 6) The Bolts shall be 304 (18-8) stainless steel 5/8" NC thread.
- 7) The Gaskets shall be of virgin Nitrile (Buna-N or NBR) compounded for water service.
- 8) The gate valve used as part of the pressure connection shall be a resilient wedge epoxy coated gate valve either Mueller A2360 or Clow. All buried hardware shall be non-Ferrous material.

Installation. After the surface disinfection, the tapping sleeve shall be mounted to the main and tapping valve to form a pressure-tight connection. The installation shall be pressure tested at operating pressure plus 50 percent, to insure the integrity of the installation. This shall be a hydrostatic test, introduced through a port on the tapping machine, or through a tapped mechanical joint stainless steel plug on the outlet side of the tapping valve. The tapping machine and the tapping valve and sleeve assembly shall be externally supported so that no additional weight is placed upon the main.

Basis of Payment This work will be paid for at the contract unit price per each for PRESSURE CONNECTION, of the main size X branch size, which price shall be payment in full for all labor, equipment, and materials necessary to complete the work specified herein including water tapping valves.

Valve vaults shall be paid for separately as VALVE VAULTS, TYPE A, 5'-DIAMETER, TYPE 1 FRAME AND CLOSED LID.

### **STORM SEWERS (WATER MAIN REQUIREMENTS) (VOS)**

Description. This work shall consist of the installation of watermain quality pipe in areas where the storm sewer line crosses above the watermain. All work shall be performed in accordance with Section 550 of the Standard Specifications and Section 40 of the "Standard Specifications for Water and Sewer Main Construction in Illinois," 7<sup>th</sup> edition.

Materials. All pipe materials shall conform to Section 40-2 of the Standard Specifications for Water and Sewer Main Construction in Illinois, 7<sup>th</sup> edition, except that only ductile iron pipe shall be allowed for round pipe. Elliptical pipe shall be allowed to be reinforced concrete pipe with gaskets meeting the requirements of ASTM C361 or C443 for perpendicular crossings of the watermain. The materials shall be approved by the Engineer prior to their installation. The watermain quality pipe shall be connected to the storm sewer pipe on both ends by use of non-shear mission couplings with stainless steel bands or a method approved by the Engineer. The cost of these connections shall be included in the cost of STORM SEWERS (WATER MAIN REQUIREMENTS).

Basis of Payment. This work shall be measured and paid for at the contract unit price per foot for STORM SEWERS (WATER MAIN REQUIREMENTS) of the size specified which price shall include all labor, equipment, and materials necessary to perform said work.

### **SANITARY SEWER (VOS)**

Description. The Contractor shall furnish and install the proposed sanitary sewer of the diameter specified at the locations shown on the plans or as directed by the Engineer. This work shall be in accordance with Sections 30 and 31 of the Standard Specifications for Water and Sewer Construction in Illinois, Section 208 of the Standard Specifications, and MWRD requirements. The sanitary sewer shall include excavation, granular bedding, installation of the sewer and testing, backfill and compaction of the trench and all incidental items required for a complete and operational sanitary sewer.

Materials. Sanitary sewer material shall be polyvinyl chloride (PVC), SDR 26, meeting ASTM D-3034 requirements. The pipe shall have joints meeting ASTM D-3212 requirements.

Construction Methods. The sanitary sewer 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. The excavation for the sanitary sewer

shall be made using trench equipment or other suitable excavating equipment. The trench for the pipe shall be excavated at least twelve inches (12") wider than the external diameter of the pipe and not more than eighteen inches (18") wider than the diameter of the pipe at the top of the pipe.

Bell holes of sufficient depth shall be provided across the bottom of the trench to accommodate the bell of the pipe to provide sufficient room for joint making and to ensure bearing for the pipe.

Where a firm foundation is not found to exist for the bottom of the trench at the required depth, due to soft, spongy or other unsuitable soil, such unsuitable soil shall be removed for the full width of the trench and replaced with well compacted unwashed gravel or an equal substitute thereof, or crushed stone if such compacted material proved unsatisfactory. The cost of this work shall not be paid for separately, but shall be included in the pay item SANITARY SEWER.

Sheeting and bracing shall be placed in the trench, as may be necessary, for the safety of the work and public, for the protection of the workmen, adjacent properties, or structures and for the proper installation of the work.

Sheeting and/or bracing shall be progressively removed as the backfill is placed in such a manner as to prevent the caving in of the sides of the trench or excavation and to prevent damage to the work.

Sheeting which is placed for the protection of the public, adjacent to properties or structures, shall not be removed until the backfill has been placed and thoroughly compacted. While sheeting is being withdrawn, all vacancies shall be carefully filled with sand free from silt and compacted.

The Contractor shall keep the trench free from water while the sanitary sewer is being placed and until the pipe joint has been sealed to the satisfaction of the Engineer.

Granular bedding shall be placed along the entire length of all sanitary sewer from six (6) inches below the sewer to twelve (12) inches above the top of the sewer. Material shall be CA-11 or CA-13. The filling shall be carried up evenly on both sides. Care shall be taken that no rock, frozen material, or other hard substances are placed in contact with the pipe. All excavated materials not needed for backfilling the trenches shall be disposed of by the Contractor.

The Contractor shall not backfill above the top of the pipe, until grade, alignment and the pipe joints have been made available for checking by the Engineer.

Unless otherwise directed, all trenches and excavations shall be backfilled as soon as possible and the work shall be prosecuted expeditiously after it has commenced.

The remainder of the trench shall be backfilled by using the material originally excavated from the trench to a height slightly above the original elevation of the ground. Trenches constructed in open cut across or within two feet (2') of any existing or

proposed pavements, existing driveway and sidewalks, shall be backfilled to subgrade with Trench Backfill.

The backfill shall be compacted in accordance with Section 550 of the "Standard Specifications" except that only Method 1 shall be used.

The sanitary sewer shall be tested for exfiltration of air pressure and for deflection in accordance with Section 31-1.12 of the Standard Specifications for Water and Sewer Main Construction in Illinois. All testing shall be performed with the Engineer's inspector in attendance. The Engineer shall be notified by the Contractor at least 48 hours in advance of the testing operations.

In the event the air or deflection tests fail to meet the allowable testing limits, the Contractor shall determine the sources of leakage and/or location of excessive deflection. The failed sections shall be repaired and retested, as necessary, at no cost to the Contract, until test results meeting the requirements of Article 31-1.12 are achieved. The cost of exfiltration and deflection testing will not be measured for payment, but shall be included in the cost of the sanitary sewer construction.

The Contractor shall maintain flow through the existing sanitary sewers within the project limits during the construction of the proposed sanitary sewer, as noted below. Flow must be maintained at all times, unless otherwise approved by the Village. Based on the flow within the sewers, this work may need to be performed during overnight hours or on weekend days. No additional compensation shall be allowed for work during these hours.

At the preconstruction meeting, the Contractor shall submit his plan for the construction of the proposed sewer, the connections to the existing sewers, and how the existing flow will be maintained. Prior to starting any work on the sanitary sewer, the Contractor shall obtain approval of the plan from the Village. Forty-eight hours advance notice is required prior to beginning any sanitary sewer work.

The Contractor shall provide all labor, equipment, supervision, and materials necessary to control flows via bypass pumping through a section or sections of pipe designated for replacement. The Contractor shall be responsible for controlling and maintaining all flows within the sewer system during this work. The Contractor may drain flows by pipes, chases, fluming, bypass pumping, or other appropriate methods approved by the Village. When bypass piping is required to cross pavement where traffic will be crossing the pipe, ramping meeting the approval of the Engineer shall be installed by the Contractor. A W8-1(O) "Bump" sign shall be installed in advance of the ramping.

Precautions shall be taken to ensure that flow control and dewatering operations shall not cause flooding or damage to public or private properties. In the event flooding or damage occurs, the Contractor shall make provisions to correct such damage at no additional cost to the Contract. The Contractor shall be responsible for any damages to public or private property, overflows from the sewer system and violations resulting in fines as a result of the dewatering/bypass operation.

The bypass shall be made by diversion of the flow from an existing upstream location, around the section(s) to be taken from service for inspection or rehabilitation, to an existing downstream location. The bypass system shall be of adequate capacity to handle all flows, including wet weather related flows. If bypass pumping is utilized by the Contractor to control flows, the Contractor shall be responsible for monitoring the bypass pumping operation at all times until the work is complete. The location of pump(s), force main, discharge point, pumping rates, etc., shall be approved by the Engineer.

The Contractor shall prepare a detailed Flow Control Plan that describes the measures to be used to control flows. The Contractor shall submit the Plan to the Engineer for review prior to beginning any flow control work. The Contractor's Plan shall include, but not necessarily be limited to, the following:

- Stand-by/back-up pump set for the bypass application.
- Detail plan for 24-hour monitoring.
- Fueling of pump sets on demand.
- Location of flow diversion structures, collapsible sewer plugs, dams, pumps, and related materials and equipment.
- Sewer plug method and type of plugs or gates to be used.
- Key operational control factors, (i.e. maximum flow elevations upstream of dams).
- Pump sizes and flow rates.
- Destination of bypassed flows, including routing of force mains and provisions for vehicular and pedestrian traffic as necessary.
- Wet weather event procedures.
- Staging areas for the pumps.
- Number, size, material, locations, and method of installation of suction piping.
- Bypass pump sizes, capacity, number of each size to be on site, and power requirements.
- Calculations of static lift, friction loss, and flow velocity.
- Stand-by power.
- Downstream discharge plan.
- Method of noise control for each pump.
- Temporary pipe supports and anchoring required.
- Heavy equipment needed for installation of pumps and piping.

The number and size of pumps utilized in bypass pumping shall be such that if the largest pump is out of service, bypass flows will be maintained during the bypass operation. Bypass pumping equipment shall include pumps, conduits, engines, and related equipment necessary to divert the flow or sewage around the section in which work is to be performed. In addition, the Contractor shall maintain at the same location and in operable condition, duplicate equipment to be used in case there is equipment failure. In this event, the Contractor shall promptly repair or replace the failed equipment to the satisfaction of the Village.



The bypass system shall be of sufficient capacity to handle the peak flow of the pipe. The Contractor shall provide the necessary labor and supervision to set up and operate the pumping and bypassing system. The Contractor shall comply with any local sound ordinance. The equipment shall be manned continuously. During bypass pumping operations, the Contractor shall provide the necessary labor to continually monitor the operation and ensure uninterrupted and sufficient pumping at all times. The bypass pumping system shall be fueled every 24 hours or when the fuel tank reaches one quarter full, whichever comes first.

The Contractor shall provide all materials and labor as necessary to maintain flows in the existing sewer interceptor and all collector and lateral lines at all times and under all weather conditions. Interruption of flows will not be permitted. Overflows from bypass operations will not be permitted to enter into any streams or bodies of water. The Contractor will be solely responsible for any legal actions taken by the federal or state regulatory agencies if such overflows occur during construction.

The Contractor shall relocate the temporary bypass piping as required to construct the proposed improvements.

New sewer pipes may be used by the Contractor to carry the sanitary flows after the new pipes have passed inspection and testing. Any "temporary" connections to the new sewer pipes shall be approved by the Village.

Engine driven equipment for bypass pumping equipment shall have "critical grade mufflers." The enclosure shall be portable in order to allow the enclosure to be moved when bypass pumping equipment is moved. These conditions are subject to any other additional stipulations that may be required by local sound ordinances.

Measurement. Sanitary sewer (of the diameter specified) will be measured per foot in place along the center line of the sewer from the inside wall of the upstream manhole or connection point to the inside wall of the downstream manhole or connection point.

Payment. Payment for sanitary sewer shall be made at the contract unit price per foot for SANITARY SEWER, of the diameter specified. Payment shall be full compensation for excavation, bedding, installation of the sanitary sewer, backfill, testing, bypass pumping, and all labor, materials, equipment and incidentals as shown on the plans and as specified herein to construct a complete and operational sanitary sewer except as noted below.

Payment for Trench Backfill shall be made at the contract unit price bid per cubic yard for TRENCH BACKFILL.

Restoration of sidewalk, driveways and landscaping shall be measured for payment under their respective bid items. Granular bedding as specified shall be included to the cost of the sanitary sewer.

## **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.

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 and TEMPORARY PAVEMENT (INTERSTATE).

Removal of temporary pavement will be paid for at the contract unit price per square yard (square meter) for PAVEMENT REMOVAL.

## **TRAFFIC CONTROL PLAN**

Effective: September 30, 1985

Revised: January 1, 2007

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

Special attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions and Special Provisions contained herein, relating to traffic control.

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

STANDARDS:

701006-05 Off-Road Operations, 2L, 2W, 15' to 24" From Pavement Edge  
701011-04 Off-Road Moving Operations, 2L, 2W, Day Only  
701101-05 Off-Road Operations, Multilane, 15' to 24" From Pavement Edge  
701301-04 Lane Closure, 2L, 2W, Short Time Operations  
701311-03 Lane Closure, 2L, 2W, Moving Operations – Day Only  
701427-05 Lane Closure, Multilane, Intermittent or Moving Operations, for Speeds <= 40 mph  
701501-06 Urban Lane Closure, 2L, 2W, Undivided  
701502-09 Urban Lane Closure, 2L, 2W, with Bidirectional Left Turn Lane  
701601-09 Urban Lane Closure, Multilane, 1W or 2W with Nontraversable Median  
701701-10 Urban Lane Closure, Multilane Intersection  
701801-06 Sidewalk, Corner, or Crosswalk Closure  
701901-08 Traffic Control Devices

DETAILS:

Traffic Control and Protection for Side Roads, Intersections & Driveways (TC-10)  
District One Typical Pavement Markers (TC-13)  
Traffic Control and Protection at Turn Bays (To Remain Open to Traffic) (TC-14)  
Pavement Marking Letters and Symbols for Traffic Staging (TC-16)  
Arterial Road Information Signing (TC-22)  
Driveway Entrance Signing (TC-26)

SPECIAL PROVISIONS:

"Work Restrictions"  
"Public Convenience and Safety (Dist 1)"  
"Maintenance of Roadways"  
"Cooperation with Adjacent Contracts"  
"Temporary Access Road (Special)"  
"Aggregate Surface Course for Temporary Access"  
"Temporary Information Signing"  
"Traffic Control and Protection (Arterials)"  
"Keeping Arterial Roadways Open to Traffic (Lane Closures Only)"  
"Equipment Parking and Storage (BDE)"  
"Lights on Barricades (BDE)"  
"Pavement Marking Removal (BDE)"  
"Temporary Pavement Marking (BDE)"  
"Traffic Control Devices – Cones (BDE)"

## **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.

## **KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (LANE CLOSURES ONLY)**

Effective: January 22, 2003

Revised: August 10, 2017

The Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these Special Provisions, the Standard Specifications, the State Standards, and the District Details.

Arterial lane closures shall be in accordance with the Standard Specifications, Highway Standards, District Details, and the direction of the Engineer. The Contractor shall request and gain approval from the Engineer seventy-two (72) hours in advance of all long-term (24 hrs. or longer) lane closures.

Arterial lane closures not shown in the staging plans will not be permitted during **peak traffic volume hours**.

Peak traffic volume hours are defined as weekdays (Monday through Friday) from **6:00 AM to 8:30 AM and 4:30 PM to 6:00 PM**.

Private vehicles shall not be parked in the work zone. Contractor's equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on State right-of-way will only be permitted at locations approved by the Engineer in accordance with Articles 701.08 and 701.11 of the Standard Specifications.

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified above, the Contractor shall be liable to the Department for the amount of:

One lane or ramp blocked = \$1,000

Two lanes blocked = \$2,500

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.

## **LANDSCAPING / PLANTING (VOS)**

**General.** Approval at place of growth does not preclude inspection and right of rejection at the site. Rejected plants or materials shall be removed immediately from the site and promptly replaced with plants and materials meeting the specified requirements, as determined by the Engineer.

The Contractor shall deliver all standard products in the manufacturer's original containers with seals unbroken, labeled with manufacturer's names, product names, and analysis where applicable.

All work shall be performed by a firm specializing in landscaping. The Contractor shall use an adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

**Nomenclature.** The botanical and common name of all plant materials shown on the drawings and required under this section are in conformance with the approved names given in "Standardized Plant Names" prepared by the American Committee on Horticultural Nomenclature. Names and varieties not included therein shall conform generally with names accepted in the nursery trade. In all cases, botanical names take precedence over common names.

Durable, legible labels stating in weather resistant ink or in an embossed process, the correct plant name, and plant size shall be securely attached to at least 1 plant from each bundle or lot.

All tags, seals, and other markers shall not be removed by the Contractor until after the final inspection and acceptance is made by the Engineer. Once the project is accepted, the Contractor shall remove all tags, seals, and other markers.

**Submittals.** The Contractor shall submit the following samples with copies of the manufacturer's specifications to the Engineer for approval prior to installation of any plants or materials.

- Specified Soil Mixes
- Soil Mixture Additives
- Hardwood Bark Mulch
- Topsoil

**Inspection of Plant Material.** Add the following to the end of Article 1081.01(c), Inspection of Plant Material:

All plant materials shall be subject to inspection and approval at the place of growth, and upon delivery for conformity to specification requirements. Approval at the place of growth shall not impair the right of the inspection and rejection upon delivery at the site or during the progress of the work for size and condition of ball, roots, canopy, diseases, insects, and latent defects or injuries. Rejected plants shall be removed immediately from the site.

Upon award of this Contract, the Contractor shall inform the Engineer of his intended sources of plant material. The Contractor shall provide the Engineer 30 calendar days advance notice of the plant material to be inspected. The Engineer will visit these sources with the Contractor to select and identify all woody plants for the project. All trees (deciduous, evergreen) and shrubs will be selected and tagged by the Engineer. The selection of materials by the Engineer shall in no way relieve the Contractor from his obligation to provide healthy plants as specified herein.

**Materials for Planting.** Add the following to the end of Article 1081, Materials for Planting:

Before commencing the work, all plant material shall be on order and the Contractor shall examine the site to determine that it is free of conditions which might be detrimental to proper and timely completion of the work. Start of work shall indicate acceptance of all the site conditions.

**Protection During Work and Maintenance.** The Contractor shall provide adequate protection during the construction period for planted areas against trespassing, erosion, and damage. Protect adjacent surfaces from damage and soiling during the work.

## **TREE PRESERVATION (VOS)**

Add the following to the end of Article 201.05(a), Temporary Fencing:

The Contractor shall install temporary barriers necessary for the preservation of existing plant materials (not to be removed) before any work takes place at the project site. The protective fencing shall be installed in accordance with Village Ordinance 154.135(C)(4). Wooden snow fencing or brightly colored plastic construction fencing shall be installed at the periphery of the drip line of the tree or beyond to prevent the storage of vehicles or materials, and the encroachment of grading and construction equipment. All protective fencing shall be maintained to the satisfaction of the Engineer.

In the event that a tree is damaged by the Contractor during construction, the Contractor shall replace such tree with a tree of a species listed in Section IX, Item C-2 of the Village of Schaumburg Subdivision Control Ordinance #1639 as specified by the Engineer, and having a diameter not less than the tree destroyed (not to exceed 6 inches, measured at 6 inches above the ground level). Any tree that is replaced out of the neglect of the Contractor shall be replaced at no cost to the Contract. In addition, all tree trimming, limbing, root pruning, and tree preservation shall be approved by the Engineer.

## **GYP SUM PLACEMENT (VOS)**

**Description.** This work shall consist of furnishing, transporting, spreading, and incorporating Gypsum into the soil in areas shown on the plans and as directed by the Engineer.

**Materials.** The Gypsum shall be an approved commercial grade.

Gypsum soil conditioner shall not be placed until the area designated has been shaped, trimmed, and finished in accordance with Section 212 of the Standard Specifications and any required placement of Topsoil has been completed. Prior to Gypsum placement, the area shall be disked or raked to a minimum depth of 4" and all debris and loose stones removed. The grades and condition of the area must be approved by the Engineer prior to Gypsum Placement.

The Gypsum shall be used in accordance with the manufacturer's direction on the package. Apply the Gypsum using a rotary-type spreader designed to apply granular products. Calibrate application equipment prior to use according to manufacturer's directions. Check frequently to be sure equipment is working properly and distributing granules uniformly. Do not use spreaders that apply material in narrow concentrated bands. More uniform application may be achieved by spreading half of the required amount of product over the area and then applying the remaining half in swaths at right angles to the first. Apply the Gypsum at the rate of 10 lbs. per 100 square feet. After the Engineer verifies that the proper amount of Gypsum has been applied, the Contractor shall completely incorporate the Gypsum into the soil to a minimum depth of 6" by raking, disking, or rototilling to amend the existing topsoil.

After the Gypsum has been incorporated into the soil, any debris or piles of unincorporated material shall be immediately removed from the right-of-way and the area finished to the lines and grades shown of the plan and approved by the Engineer. Disposal of material shall be done in accordance with Article 202.03.

**Method of Measurement.** Gypsum Placement will be measured in pounds by weight of actual product used at the locations shown in the plans and listed in the special provisions, and as directed by the Engineer prior to incorporation into the soil.

**Basis of Payment.** This work will be paid for at the Contract Unit Price per pound for GYP SUM PLACEMENT. Payment shall include all costs for materials, equipment, and labor required to complete the work specified herein, including the cost of removing and disposing of any debris.

## **PERENNIAL PLANTS (VOS)**

**Description.** Work under this item shall be performed in accordance with Section 254 of the Standard Specifications for Road and Bridge Construction except as modified herein.

**Layout of Planting:** Add the following to Article 254.06, Layout of Planting:



The configuration of all plant beds shall be staked or laid out by the Contractor and verified by the Engineer prior to commencing with plant bed preparation.

**Planting Procedures:** Add the following to Article 254.06, Planting Procedures:

When planting perennials in bed areas shown on the plans or as directed by the Engineer, the following work shall be performed prior to planting:

All existing turf shall be cut out 2" below the existing soil line, and disposed of as specified in Article 202.03, or killed using glyphosate based broad spectrum herbicide manufacturer's suggested rate 14 days prior to planting.

Compost shall be placed on the planting beds to a depth of 2" then tilled into the soil to a depth of 6" to amend the existing topsoil.

Fertilizer nutrients shall be added and applied to the perennial beds at a 5:3:2 ratio as follows:

Nitrogen Fertilizer Nutrients	90 lbs./acre
Phosphorus Fertilizer Nutrients	54 lbs./acre
Potassium Fertilizer Nutrients	36 lbs./acre

This fertilizer shall be tilled and cultivated into the soil to a depth of 6".

Gypsum shall be placed on the planting beds at the rate specified then tilled into the soil to a depth of 6" to amend the existing soil.

**Mulching:** Add the following to Article 254.07:

Within 24 hours, the entire perennial plant bed shall be mulched with 2" of fine grade shredded hardwood bark mulch. A mulch sample shall be submitted to the Engineer for approval 72 hours prior to placing. Care shall be taken to place the mulch so as not to smother the plants.

Pre-emergent herbicide shall be used in the perennial beds after the mulch has been properly installed. See specification for Weed Control, Pre-emergent Granular Herbicide.

**Method of Measurement.** Add the following to Article 254.09:

Disposal of sod, vegetative ground cover, and debris (rock, stones, concrete, etc.) shall be removed from the perennial planting bed as specified in Article 202.03.

Fertilizer nutrients will be measure for payment as specified in Article 250.09.

Compost will be measured in cubic yards placed and incorporated into the soil.

Gypsum will be measured in pounds placed and incorporated into the soil.

**Basis of Payment.** Add the following to Article 254.10:

Fertilizer will be paid as specified in Article 250.10.

Compost will be paid for as specified in Compost Placement at the Contract Unit Price per cubic yard for COMPOST FINISH AND PLACE, SPECIAL.

Pre-emergent herbicide will be paid for as specified in Weed Control, Pre-Emergent Granular Herbicide at the Contract Unit Price per pound for WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE.

Gypsum will be paid for at the Contract Unit Price per pound for GYPSUM PLACEMENT.

Payment for shredded hardwood bark mulch shall be included in the Contract Unit Price of the perennial plant pay item.

Disposal of sod, vegetative ground cover, and debris (rock, stones, concrete, etc.) removed from the planting bed as specified in Article 202.03 shall be included in the Contract Unit Price of the perennial plant pay item.

Payment for perennials, ground covers, and bulbs shall be made at the Contract Unit Price in place of the perennial plant pay item.

## **PLANTING WOODY PLANTS (VOS)**

**Description.** Work under this item shall be performed in accordance with Section 253 of the Standard Specifications for Road and Bridge Construction except as modified herein.

**Layout of Planting:** Add the following to Article 253.07, Layout of Planting:

The configuration of all plant beds shall be staked or laid out by the Contractor and verified by the Engineer prior to commencing with plant bed preparation.

**Planting Procedures:** Add the following to Article 253.10, Planting Procedures:

When planting shrubs and trees in bed areas as shown on the plans or as directed by the Engineer, the following work shall be performed prior to planting:

All existing ground cover vegetation shall be cut out 2" below the existing soil line and disposed of as specified in Article 202.03, or killed using a glyphosate based broad spectrum herbicide at the manufacturer's suggested rate 14 days prior to planting.

Compost shall be placed on the planting beds to a depth of 2" then tilled into the soil to a depth of 6" to amend the existing topsoil.

Fertilizer nutrients shall be added and applied to the planting beds at a 5:3:2 ratio as follows:

- Nitrogen Fertilizer Nutrients 90 lbs./acre
- Phosphorus Fertilizer Nutrients 54 lbs./acre
- Potassium Fertilizer Nutrients 36 lbs./acre

This fertilizer shall be tilled and cultivated into the soil to a depth of 6”.

All plant beds and individual tree saucers with a minimum diameter of 5’ shall receive a hand tooled edge. Using a garden spade, the edge shall be cleanly trenched to a minimum depth of 3” with one vertical side toward the lawn areas.

**Mulch Cover:** Omit Article 253.11, Mulch Cover and substitute with the following:

Within 48 hours after planting, shredded hardwood bark mulch shall be placed around all plants in the entire mulched bed or saucer area specified to a depth of 3”. The shredded hardwood bark shall be: free of leaf material, standard size with a minimum particle size of 1/4" and a maximum size of 1 1/4". In all areas within the project limits where there is existing plant material, all trees, shrubs, and planting beds shall be mulched according to the specifications for new plant material, included in the cost of the Contract. No weed barrier fabric will be required for tree and shrub planting. Pre-emergent herbicide will be used instead of weed barrier fabric. The pre-emergent herbicide shall be applied according to the Special Provision for Weed Control, Pre-emergent Granular Herbicide.

**Wrapping of Tree Trunks:** Delete Article 253.12 and substitute the following:

Wrapping of all deciduous trees (shade trees and ornamentals) shall be done immediately after planting. Trees shall be inspected for injury to trunks, disease, insect infestation, and improper pruning before wrapping. The Contractor shall be responsible for the condition of this wrapping throughout the life of this Contract. Any damage resulting from the improper installation or maintenance of this wrapping shall be the responsibility of the Contractor and such damaged trees shall be replaced by the Contractor at his expense.

**Period of Establishment.** Delete the second and third paragraphs of Article 253.14. of the Standard Specifications to read:

**Method of Measurement.** Add the following to Article 253.16:

Fertilizer nutrients will be measured for payment in place as specified in Article 250.08.

Compost will be measured in cubic yards placed and incorporated into the soil as specified in Article 211.08.

Gypsum will be measured in pounds placed and incorporated into the soil.

**Basis of Payment:** Add the following to Article 253.17:

Fertilizer will be paid as specified in Article 250.09.

Compost will be paid for as specified in Compost Placement at the Contract Unit Price per cubic yard for COMPOST FURNISH AND PLACE, SPECIAL.

Pre-emergent herbicide will be paid for as specified in Weed control, Pre-Emergent Granular Herbicide at the Contract Unit Price per pound for WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE.

Gypsum will be paid for at the Contract Unit Price per pound for GYPSUM PLACEMENT.

Payment for shredded hardwood bark mulch shall be included in the Contract Unit Price of the woody plant pay item.

Disposal of sod, vegetative ground cover, and debris (rock, stones, concrete, etc.) removed from the planting bed as specified in Article 202.03 shall be included in the Contract Unit Price of the woody plant pay item.

### **TOPSOIL AND COMPOST (VOS)**

Add the following to Article 211, Topsoil and Compost:

The Contractor shall inform the Engineer of his/her intended source for topsoil. The Engineer will inspect the topsoil to ensure that it meets with the requirements of the specifications.

### **MEDIAN SOIL MIX FURNISH AND PLACE (VOS)**

**Description.** Work under this item shall be performed in accordance with Section 200 of the Standard Specifications for Road and Bridge Construction except as modified herein. This work shall consist of testing, preparing, furnishing, and placing median soil including finish grading.

**General Requirements.** In general, the Median Soil Mix shall be 2 parts pulverized top soil and 1 part coarse sand. The sand shall be added and mixed during the pulverization process only. The sand shall be of an F2 gradation.

**Submittals.** Soil Testing: No median soil mix shall be delivered to the site until the Engineer has reviewed test results and has accepted the median soil mix. The Contractor shall employ a soil testing agency, acceptable to the Engineer, which uses methods approved by the Association of Agricultural Chemists. A minimum of 3 samples shall be taken from different locations of the proposed median soil source.

The median soil test report shall include the following, and the appropriate ranges are as follows:

Chemical Analysis:	HIGH	LOW
pH	7.0	6.5
Mechanical Analysis		
% clay	25%	0%
% silt	77%	45%
% sand	33%	25%

Additionally, the following variables are required\*:

Cation exchange capacity (CEC)	n/a	20.0 cmolc/kg
Soluble salts	3.5 mS/cm	2.0 mS/cm
(as measured using Saturated Media Extract (SME) testing)		
Organic matter	n/a	5%

\* The report shall also include recommendations to mitigate any issues from the results of these items.

The mechanical analysis should show that the % sand, % silt, and the % clay must yield a silt loam soil. See the Textural Classes diagram. To determine the class, plot a line parallel to the % clay axis starting the line at the value of the % silt. Plot another line parallel to the % sand axis starting the line at the value of the % clay. The intersection of these lines should be in the silt loam region.

**Inspections.** The Engineer retains the right to visually inspect the Median Soil Mix on site before placement. The Engineer may ask that the material suspected of not meeting specification be removed from the site.

The Engineer will take samples of the Median Soil Mix within 24 hours after it has been placed. A sample will be taken every 300', at a minimum of once every median, and tested by the Contractor's testing agency. Chemical and mechanical tests for the above referenced requirements shall be performed. If the Median Soil Mix in place does not meet specification, then that area or median will not be paid for. The Contractor shall remedy any discrepancies, per the soil test report recommendations, to the satisfaction of the Engineer or remove/replace Median Soil Mix with new material which meets specification, so that full payment can be made.

**Preparation and Placement.** Structure Adjustments: perform or coordinate final adjustments of any utility structure.

Clean medians of all trash and debris before placement of the Median Soil Mix. Remove and legally dispose of debris off site. Repair to the satisfaction of the Engineer any portion of the pipe underdrain.

Place, spread, and rough grade specified Median Soil Mix to depths specified in all areas to be planted. Place the Median Soil Mix in 2 level lifts. The first lift shall contain 2/3 of the median soil depth. After placing each lift, moisten the surface at a rate of 1 gallon of water per square foot. Allow the water to thoroughly percolate through the soil before placing the next lift. Allow for settling, and place additional planting soil as

necessary. Allow for placement and mixing of compost in perennial planting areas, but place enough soil mix to meet finish grades within specified tolerances.

Rake smooth and finish grade all planted areas. The removal of excess material or the addition of median soil may be required prior to landscaping. This shall be included in the unit price for MEDIAN SOIL MIX FURNISH AND PLACE. Grading will be to a tolerance of +/- .10 foot of design grades. Grade disturbed by irrigation installation shall be restored to finish grade and raked smooth.

All debris, litter, tire tracks, dirt, and unintended materials shall be removed, raked, swept or washed off all landscape, hard median surfaces, and pavement on a daily basis.

The material shall be installed to the shape shown on the plans or as directed by the Engineer. The minimum thickness shall be 24”.

**Method of Measurement.** Median Soil Mix Furnish and Place will be measured for payment in cubic yards at the locations shown in the plans and as directed by the Engineer.

**Basis of Payment.** Median Soil Mix Furnished and Placed will be paid for at the Contract Unit Price per cubic yard for MEDIAN SOIL MIX FURNISH AND PLACE.

## **COMPOST FURNISH AND PLACE, SPECIAL (VOS)**

**Description.** Work under this item shall be performed in accordance with Section 200 of the Standard Specifications for Road and Bridge Construction except as modified herein. This work shall consist of furnishing, transporting, spreading, and incorporating landscape compost into soil in areas shown on the plans and as directed by the Engineer.

**Materials.** Add the following to Article 1081.05(b) Topsoil and Compost:

The Contractor shall inform the Engineer of his intended source for the landscape compost. The Engineer will inspect the landscape compost to ensure that it meets with the requirements of the specifications. The compost shall be a mixture of decomposed grass clippings, small branches, and leaves. Said mixture shall be screened and free of refuse, stone, clumps, roots, large branches, clay, and other foreign material. The compost shall be of such consistency that it can be readily incorporated with the topsoil.

Compost shall not be placed until the area designated has been shaped, trimmed, and finished in accordance with Section 212 of the Standard Specifications, and any required placement of topsoil has been completed. Prior to compost placement, the area shall be disked or raked to a minimum depth of 2” and all debris and loose stones removed. The grades and condition of the area must be approved by the Engineer prior to Compost Placement.

The compost shall be placed in the planting beds to a 2" depth and shall meet finish grades within specified tolerances. After the Engineer verifies that the proper compost depth has been applied, the Contractor shall completely incorporate the compost into the soil to a minimum depth of 6" by raking, disking or rototilling to amend the existing topsoil.

After the compost has been incorporated into the soil, any debris or piles of unincorporated material shall be immediately removed from the finished area to the lines and grades shown on the plan and approved by the Engineer. Disposal of material shall be done in accordance with Article 202.03.

**Method of Measurement.** Compost Furnish and Place will be measured in square yards at the locations listed in the special provisions and as directed by the Engineer prior to incorporation into the soil.

**Basis of Payment.** This work will be paid for at the Contract Unit Price per square yard for COMPOST FURNISH AND PLACE, SPECIAL. Payment shall include all costs for materials, equipment, and labor required to complete the work specified herein, including the cost of removing and disposing of any debris.

## **SODDING, SALT TOLERANT (VOS)**

**Description.** Work under this item shall be performed in accordance with Section 252 of the Standard Specifications for Road and Bridge Construction except as modified herein.

**Sod:** Add the following to Article 1081.03:

Sod shall be cleanly cut, either by hand or machine, to a minimum uniform thickness of 1" but of not more than 2", to a uniform width of 18", and in strips of not less than 3'-0" nor more than 6'-0" in length. Edges of sod shall be straight.

**Sodding Time:** Add the following to Article 252.04:

Sod shall be delivered to the site within 24 hours of harvest at the sod nursery. All sod installation shall be complete within 36 hours of harvest from the sod nursery. The Contractor shall submit a ticket from the sod nursery clearly stating the date and time of day that harvest took place.

**Transportation:** Add the following to Article 252.05:

Care shall be taken to retain the native soil on the roots during the process of stripping, transporting, and placing sod. Sod shall be cut and transported only when moisture conditions are favorable for correct handling, and shall be protected by a suitable canvas or other wind-resistant material while in transit. Dumping of sod from vehicles on the areas of delivery will not be permitted. Sod shall be delivered within 24 hours from time of cutting. Sod which has been damaged in transit or in handling, including drying out, shall be rejected and removed from the site immediately.

**Placing Sod:** Delete paragraph 1 of Article 252.06 and substitute the following:

Sod shall be of type specified, laid smoothly, edge to edge in close contact on the prepared surface, with joints staggered. Sod shall be pressed into setting bed immediately by tamping or rolling with approved equipment to eliminate air pockets and to produce an even surface. Where grades are such that the flow of water will be over sodded areas and onto paved areas, after compaction, the sod shall be placed flush with the pavement or drainage structures.

**Inspection:** Add the following to article 252.11:

Sod shall have been grown on a well-drained, fertile, sandy loam (not peat) soil. Sod shall be cut or stripped from living thickly matted turns of firmly rooted specified turf type. The consistency of adherent soil shall be such that it will not break, crumble, or tear during handling and placing of the sod.

**Maintenance of Sodded Areas:** Add the following to Article 252:

Maintenance of sodded areas by the Contractor shall consist of watering, weeding, 3 mowings, repair of erosion, spraying the sodded areas to keep them free of insects and diseases, and re-sodding as necessary to establish a uniform stand of turf. The Contractor shall provide general care for sodded areas until the time of knitting, or a period of not less than 6 weeks. Prior to acceptance, sodded areas shall be mowed at least 3 times by the Contractor to maintain healthy vigorous growth. At no time shall the turf be mowed shorter than 2" or the average height allowed to become more than 4". Debris encountered during the mowing and/or overseeding operation shall be removed and disposed in accordance with Article 250.05. Damage to the sodded areas, such as ruts or wheel tracks more than 2" in depth, shall be repaired by the Contractor to the satisfaction of the Engineer. If noxious weeds start growth which threatens to smother the species grass, they shall be removed or sprayed as directed by the Engineer, and the vacant spots filled with new sod, if necessary. All necessary weed control applications and re-sodding are included in the cost for sodding.

Method of Measurement: Add the following to Article 252.12:

Payment for maintenance of sodded areas shall be included in the Contract Unit Price of SODDING, SALT TOLERANT.

## **WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE (VOS)**

**Description:** This work shall consist of spreading a pre-emergent granular herbicide in areas as shown on the plans or as directed by the Engineer. This item will be used in mulched plant beds and mulch rings.

**Materials:** The pre-emergent granular herbicide shall contain the chemicals Trifluralin 2% active ingredient and Isoxaben with 0.5% active ingredient. The herbicide label



shall be submitted to the Engineer for approval at least seventy-two (72) hours prior to application.

**Method:** The pre-emergent granular herbicide shall be used in accordance with the manufacturer's directions on the package. The granules will be applied within 4 days after planting or mulching. If the herbicide is applied 5 days after planting or mulching, it is considered ineffective and shall not be measured and/or paid for.

Apply the granular herbicide using a drop or rotary-type designed to apply granular herbicide or insecticides. Calibrate application equipment to use according to manufacturer's directions. Check frequently to be sure equipment is working properly and distributing granules uniformly. Do not use spreaders that apply material in narrow concentrated bands. Avoid skips or overlaps as poor weed control or crop injury may occur. More uniform application may be achieved by spreading half of the required amount of product over the area and then applying the remaining half in swaths at right angles to the first. Apply the granular herbicide at the rate of 2.3 lbs/1000 square feet.

**Method of Measurement.** Pre-emergent granular herbicide will be measured in place in Pounds of Pre-emergent Granular Herbicide applied. Areas treated 5 days or more after planting or placing mulch shall not be measured for payment.

**Basis of Payment.** This work will be paid for at the contract unit price per pound of WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE which price shall include all materials, equipment, and labor necessary to complete the work as specified.

## **IRRIGATION SYSTEM (VOS)**

### **PART 1 - GENERAL**

- A. This work shall consist of furnishing and installing landscape irrigation as shown on the plans and described herein. This work shall include all material and labor required to install a complete functioning, automatically controlled irrigation system, including but not limited to piping, valves, control wiring and conduits, PVC sleeves, valve boxes, spray heads and drip tubing, etc.
- B. Related Documents
  - 1. Drawings
  - 2. IDOT Standard Specifications for Road and Bridge Construction, Latest Edition.
- C. Definitions
  - 1. Lateral Piping: Downstream from control valves to sprinklers and specialties. Piping is under pressure during flow.

2. Irrigation Main Piping: Downstream from point of connection to service line piping including control valves. Piping is under system pump pressure.
3. Supply Header: PVC pipe downstream of remote control valve with multiple connections to driplines.
4. Flush Header: PVC pipe with multiple connections to driplines that forms the end of a drip zone.
5. Drip Irrigation: Low-volume water delivery system utilizing in-line drip tubing, pressure-compensating emitters, low-volume sprays and bubblers or any combination of these products.
6. The following are industry abbreviations for plastic materials:
  - a. ABS: Acrylonitrile-butadiene-styrene plastic.
  - b. HDPE: High density polyethylene.
  - c. FRP: Fiberglass-reinforced plastic.
  - d. PA: Polyamide (nylon) plastic.
  - e. PE: Polyethylene plastic.
  - f. PP: Polypropylene plastic.
  - g. PTFE: Polytetrafluoroethylene plastic.
  - h. PVC: Polyvinyl chloride plastic.
  - i. SDR: Standard dimension ratio.
  - j. TFE: Tetrafluoroethylene plastic.

#### D. System Requirements

1. Location of Sprinklers and Specialties: Design location is approximate. Minor adjustments shall be made as necessary to avoid plantings and obstructions such as signs, light poles, utilities, planters and tree grates.
2. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties, unless otherwise indicated:
  - a. Irrigation Main Piping: 50 psig
  - b. Lateral Piping: 30 psig

Minor adjustments shall be made as necessary due to existing watermain pressures and losses through proposed irrigation equipment.

E. Submittals

1. Product Data: Include pressure ratings, rated capacities, and settings of selected models for the following:
  - a. Shut-off valves.
  - b. Remote Control valves.
  - c. Quick-couple valves.
  - d. Valve boxes.
  - e. Composite concrete handholes.
  - f. Spray head equipment and accessories.
  - g. Dripline equipment and accessories.
  - h. Controllers. Include wiring diagrams.
  - i. Control wiring and conduit. Include splice kits.
  - j. Irrigation pipe and fittings.
2. Coordination Drawings: Show piping and major system components. Indicate interface and spatial relationship between piping, system components, adjacent utilities, and proximate structures.
3. Field quality-control test reports.
  - a. Pressure and flow test performed at point(s) of connection.
4. Operation and Maintenance Data: For irrigation systems, to include in operation and maintenance manuals. Include the following:
  - a. Contractor information sheet (including Contractor's name, address, numbers and point of contact).
  - b. Duration of warranty period.
  - c. Pressure line tests.
  - d. Controller settings and charts.
  - e. Equipment list, including manufacturer and model information for
    - 1) Service connection equipment.
    - 2) Controller enclosures and equipment.
    - 3) Automatic-control valves.
    - 4) Manual isolation valves.
    - 5) Spray heads and drip equipment.
    - 6) Controllers, RPZ and enclosure.
    - 7) Valve boxes.
  - f. Spare parts list.
  - g. Startup procedures.
  - h. Winterization procedures.

i. Record drawings.

F. Quality Assurance

1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
2. Installer shall have five (5) years minimum experience on comparable irrigation system projects.
3. Installation of equipment shall be done in accordance with the National Electric Code, Municipal/Plumbing Code, and manufacturer recommendations.

G. Delivery, Storage and Handling

1. Deliver semi-rigid piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.
2. Deliver flexible piping in factory-assembled rolls. Maintain protective wrap or packaging through shipping, storage and handling.
3. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

H. Project Conditions

1. Locations and elevations of existing utilities shall be field verified prior to beginning construction. The Contractor shall notify the Engineer of any conflicts with the proposed irrigation design.
2. The Contractor shall be responsible for repair any damages to existing identified/marked utilities.
3. Irrigation Contractor shall coordinate with other trades to ensure pre-construction protective measures have been taken to maintain existing system operation and integrity.
4. The irrigation system was designed utilizing the working pressure(s) shown on the Drawings. In the event the minimum pressures required on the Drawings cannot be provided, Irrigation Contractor shall notify the Village's Landscape Architect immediately upon discovery of the discrepancy.

## I. Coordination

1. General: Coordination is required between several trades to execute the design as shown on the Drawings.
  - a. Proposed irrigation enclosure and controller shall be at locations as shown on the Drawings. Irrigation Contractor shall ensure that all requirements for controller wire connections (both power and control) have been coordinated with the relevant trades.

## PART 2 - PRODUCTS

### A. Pipes, Tubes and Fittings

1. Refer to Part 3 "Piping Applications" Article for applications of pipe, fitting, and joining materials.
2. Hard Copper Tube: Type K (ASTM B 88M and B-251) water piping.
  - a. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought- copper, solder-joint fittings. Furnish wrought- copper fittings if indicated.
  - b. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end.
  - c. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends.
3. PVC, Pressure-Rated Pipe:
  - a. Circuit Piping (all sizes): ASTM D 2241, PVC 1120 compound, SDR 21.
  - b. Mainline Piping, 3" and smaller: ASTM D 2241, PVC 1120 compound, SDR 21.
  - c. Sleeves (all sizes): ASTM D 1785, PVC 1120 compound, Schedule 40
4. PVC Socket fittings, Schedule 40, ASTM D 2467.

### B. Joining Materials

1. Solvent Cement (PVC Piping):
  - a. Primer and Solvent conforming to ASTM D2564-02

### C. Ball Valves

1. General: Cast brass quarter turn ball valve with handle and threaded

ends conforming to ANSI Standard B 2.1. Size shall match pipeline.

D. Quick-Couple Valves

1. General: Factory-fabricated, brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, locking rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key.
  - a. Locking-Top Option: Vandal-resistant, locking feature. Include two matching keys.

E. Round Valve Boxes

1. Application: Flush valves, Quick couple valves, air/vacuum valves
2. Box and cover, with open bottom and openings for piping; designed for installing flush with grade. Include size as required for valves and service.
  - a. Shape: Round
  - b. Sidewall Material: Polymer concrete
  - c. Cover Material: Polymer concrete, green in color in landscape; grey/concrete color in concrete; or standard color to match brick. Cover shall be bolt down or have locking mechanism.
3. Drainage Backfill: Cleaned gravel or crushed stone, graded from 3/4-inch minimum to 1-inch maximum.

F. Composite Concrete Handholes

1. Application: Manual isolation valve, automatic control valve and drip zone control valve.
2. Box and cover, with open bottom and openings for piping; designed for installing flush with grade. Include size as required for valves and service.
  - a. Shape: Rectangular
  - b. Sidewall Material: Polymer concrete
  - c. Cover Material: Polymer concrete, green in color in landscape; grey/concrete color in concrete; or standard color to match brick. Cover shall be bolted, gasketed and provided with an irrigation logo.
  - d. Ratings: Minimum Tier 8
3. Drainage Backfill: Cleaned gravel or crushed stone, graded from 3/4-

inch minimum to 1-inch maximum.

#### G. Swing Joint Assemblies

1. Swing joint assemblies shall be manufactured of rigid PVC, Type 1, Cell classification 12454-B per ASTM D1784 with NPT threads and pipe sockets per ASTM D2464 and D2466, respectively. Each rotating joint shall be sealed with Buna rubber O-ring, installed pre-compressed in a sealing groove free of parting lines to prevent leakage. Modified stub ACME threads shall have specially engineered diameters and clearances to allow full circle movement in 360 degrees.

#### H. Spray Head Equipment and Accessories

1. Automatic Control Valve:
  - a. Electric remote control valve shall consist of dc solenoid type, commercial rated, globe type diaphragm valve (normally closed).
2. Pop-up Spray Heads
  - a. Spray heads shall have the pop-up heights and radiuses as shown on the plans. Sprinkler body shall be UV-resistant, heavy-duty, polyethylene body with inline check valve. The riser sprinkler shall have an adjustable pattern alignment, and positive return spring.

#### I. Dripline Equipment and Accessories

1. Drip Control Zone Kit:
  - a. Factory assembled kit for controlling low-flow irrigation zones comprised of the following components:
    - 1) Low-flow, dc solenoid, remote control valve with external bleed and internal bleed for manual operation.
    - 2) Pressure regulator with plastic body capable of maintaining outlet pressure between 20-120 psi.
    - 3) Filtration provided by inline Y filter of heavy-duty glass-filled nylon material with minimum 150-mesh filter screen (factory-installed).
2. Landscape Dripline Tubing
  - a. Flexible PE tubing with pre-installed pressure-compensating emitters with dual outlet ports, spaced 12" on-center. Flow rate shall be 0.9 to 1.0 gallons-per-hour.

3. Dripline Extension Tubing

- a. Flexible PE tubing, ½-inch minimum (ID controlled). Fittings shall be lock- type, UV-resistant with external locking ring.

4. Air/Vacuum Relief Valve

- a. Air/vacuum relief valve designed to be installed on dripline tubing, and as shown on plans.

5. Flush Valve

- a. Flush valve shall consist of PVC ball valve, with adapters, and dripline extension tubing located in a round valve box.

6. Operation Indicator

- a. Pop-up indicator, with yellow stem, that attaches to PVC or dripline tubing, identifying low water pressure in pipe/dripline tubing. The nozzle shall be removeable for winterization.

J. Irrigation Controller

- 1. Irrigation controller shall operate the number of stations as indicated on the plans.
- 2. Irrigation controller shall be fully automatic, incorporating a 24-hour clock and 14-day minimum calendar. Controller shall be capable of repeating watering cycles as required with a maximum 2-hour delay between cycles.
- 3. Irrigation controller shall be battery operated, and shall not require electric power.
- 4. The controller shall be located in plastic enclosure (as provided by the manufacturer), and mounted inside a fiberglass, lockable, flip top enclosure, as shown on the plans.

K. Control Wire

- 1. Two conductor, or multi-conductor, solid-copper twisted pair cable with overall jacket of polyvinyl chloride insulation, UL listed and rated for exterior, underground installations. Control wire shall be installed in 1" Schedule 40 PVC conduit.
- 2. Control wire shall be a minimum of a no. 14 AWG, color coded as follows:



- a. Control Cable – Red or black
- b. Common Cable – White
- c. Ground Cable – Green

L. Wire Splices

1. Wire splices shall be waterproof, compression type, as shown on the plans.

M. Miscellaneous Sprinkler Equipment

1. Valve Identification Tags: Pre-printed plastic tags with minimum text height of 1", capable of being attached to valve stem or valve wire within valve box.

PART 3 - EXECUTION

A. General

1. Install piping and electric wiring in sleeves under roadways and driveways as shown on the plans.
  - a. Coordinate sleeve installation to occur prior to pavement construction
  - b. Piping sleeves shall be per Article 810.
  - c. Sleeves shall extend a minimum of 24" beyond the pavement.
2. Provide minimum cover over top of underground piping according to the following:
  - a. Irrigation Main Piping: Minimum depth of 24 inches below finished grade
  - b. Lateral Piping (including drip headers): 18 inches
  - c. Sleeves: 24 inches

B. Preparation

1. Stake layout of system in the field, utilizing appropriate materials and notify Engineer to obtain approval prior to beginning installation activities.
  - a. Notify the Engineer 48 hours prior to desired on-site review. Engineer will provide review within the 48-hour time period.

C. Point of Connection

1. Construct connection to stubbed supply lines (provided by others) using appropriate fittings for metallic to plastic piping.

D. Piping Applications

1. Install components having pressure rating equal to or greater than system operating pressure.
2. Underground Irrigation Main Piping: Use the following piping materials for each size range:
  - a. NPS 3" and Smaller: SDR 21, PVC, pressure-rated pipe.
3. Lateral Piping: Use the following piping materials for each size range:
  - a. NPS 2" and Smaller: SDR 21, PVC, pressure-rated pipe; Schedule 40, PVC socket fittings; and solvent-cemented joints.
4. Swing Assemblies: Install appropriate swing assemblies as required by the Drawings and Part 2 above.
5. Sleeves: Schedule 40, PVC pipe and socket fittings; and solvent-cemented joints.
6. Transition Fittings: Use transition fittings for plastic-to-metal pipe connections according to the following:
  - a. Couplings:
    - 1) Underground Piping NPS 1-1/2" and Smaller: Manufactured fitting or coupling.
    - 2) Underground Piping NPS 2" and Larger: AWWA transition coupling.
  - b. Fittings:
    - 1) Aboveground Piping: Plastic-to-metal transition fittings.
    - 2) Underground Piping: Union with plastic end of same material as plastic piping.

#### E. Valve Applications

1. Remote Control Valves:
  - a. NPS 2" and Smaller: Plastic or bronze automatic control valve.
2. Shut-off Valves:
  - a. NPS 2" and Smaller: Brass NRS Ball Valve

#### F. Piping Installation

1. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved on Coordination Drawings.
2. Install piping free of sags and bends.
3. Install groups of pipes parallel to each other and spaced to permit valve servicing.
4. Install fittings for changes in direction and branch connections.
5. Install underground thermoplastic piping according to ASTM D 2774.
6. Install PVC piping in dry weather when temperature is above 40 deg F 5 deg C. Allow joints to cure at least 24 hours at temperatures above 40 deg F 5 deg C before testing unless otherwise recommended by manufacturer.

#### G. Joint Construction

1. Construct solvent-weld joints per ASTM D2855.

#### H. Valve Installation

1. Control Valves: Install in rectangular composite concrete handhole per the Plans.
2. Quick Couple Valves: Install in round valve box per the Plans.
3. Shut-off Valves: Install in rectangular composite concrete handhole per the Plans.

I. Spray Head Installation

1. Install spray heads as indicated on plans and a minimum of 6" behind the back of curb.

J. Dripline Installation

1. Following final grading or fill operations, install dripline as indicated on the drawings. Parallel lines shall be spaced per the plans with the emitters 'staggered' to provide even coverage of the irrigated area.
2. Install stainless steel stakes at 36-inch intervals to secure the dripline to the finished grade.
3. Construct supply and flush headers of PVC pipe as shown on the plans and make connection to dripline tubing with appropriate compression fittings.
4. Install Air/Vacuum relief kit at the highest point of the dripline zone as indicated on the plans.
5. Install flush valves at the lowest point of the dripline zone as indicated on the plans.
6. Install operation indicators after the drip zone kits.

K. Irrigation Controller Installation

1. Install controllers as indicated on plans.
2. Install control wire conduits in same trench as irrigation piping as indicated on plans. Provide conductors of size not smaller than recommended by controller manufacturer and as indicated on plans. Voltage drop shall be taken into consideration based valve requirements and distance from the controller. Install cable in separate conduit sleeve under paved areas if irrigation piping is installed in sleeve.
3. Pull control cables through provided conduit to controller location and make final connections per the manufacturer's recommendations.

L. Connections

1. Drawings indicate general arrangement of piping, fittings, and

specialties.

2. Make all electrical connections in conformance with local code requirements. Provide waterproof connectors for all underground electrical connections.
3. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

#### M. Labeling and Identifying

1. Provide valve tags at each remote control valve as indicated on the plans.

#### N. Field Quality Control

1. Perform the following field tests and inspections and prepare test reports:
  - a. Hydrostatic Test: After installation, charge system with pressurized air to 100 psi. System will be able to maintain pressure with no more than 5 psi loss in one hour. Each valve shall be opened and closed during test. The Village's Landscape Architect must be in attendance during test. Provide a minimum of 48 hours notice prior to scheduled test.
  - b. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
  - c. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
2. Remove and replace faulty/malfunctioning system components and retest as specified above until the requirements are met.

#### O. Startup Service

1. Verify that controllers are installed and connected according to the Contract Documents.
2. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements.
3. Complete startup checks according to manufacturer's written instructions.

P. Adjusting

1. Adjust settings of controllers and provide initial watering schedule per Owner's requirements.
2. Adjust automatic control valves to provide flow rate of rated operating pressure required for each sprinkler circuit.
3. Adjust valve boxes so they will be flush with finished grade.

Q. Cleaning

1. Flush dirt and debris from piping before installing sprinklers and other devices.

R. Demonstration

1. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain controller and automatic control valves.
2. Schedule a complete demonstration and system walk-through with the Engineer. Final Payment will not be made until all items noted during demonstration and walk-through have been made by Contractor and verified by Engineer.

S. Documentation

1. Provide a complete operations and maintenance manual to the Engineer in a three-ring binder with the following items, separated by tabbed dividers for clear organization.
  - a. Provide a label on the spine of the binder clearly stating "IRRIGATION SYSTEM OPERATION AND MAINTENANCE".
  - b. Table of Contents
  - c. Cut-sheets or manufacturer's data for all installed equipment including:
    - 1) Remote Control Valves
    - 2) Manual Isolation Valves
    - 3) Spay Heads
    - 4) Spray Head Accessories (swing joint assemblies)
    - 5) Dripline Tubing
    - 6) Dripline Accessories (filters, valves, pressure regulators, operation indicators, air/vacuum relief valve, flush valves)
    - 7) Controller
    - 8) Control Wiring and Splices

- 9) Handhole and Junction Boxes
- d. Operations Data from manufacturers documenting diagnostic, repair and replacement procedures for all items "a" through "f" identified above.
- e. Complete description of spring start-up operations including:
  - 1) Valve inspection
  - 2) Controller programming guidelines for spring, summer and fall watering schedules. Guidelines shall be based on historical EVT rates for the Chicago area.
  - 3) Controller battery replacement
  - 4) Spray head inspection and replacement
  - 5) Drip zone filter inspection and replacement
  - 6) Drip zone back-flushing operations
- f. Complete description of fall shut-down/winterization operations including:
  - 1) Blow-out procedures for irrigation system
  - 2) Drain-down procedures for irrigation system
  - 3) Controller shut-down procedures
2. Provide a record drawing at the same size and scale as the design drawings on reproducible vellum or Mylar, and pdf files located on a zip drive, with the following information clearly shown:
  - a. Location of all sleeves with dimensions to site elements
  - b. Location of mainline and lateral pipe runs with sizes clearly indicated
  - c. Location of all valves
  - d. Location of controllers and rain/freeze sensor
  - e. Utilize standard industry symbols and notations for all equipment.
3. Provide a copy of the Maintenance/Operations Manual and Record Drawing to the Engineer for review and approval prior to transmittal to the Owner.
  - a. Contractor shall make all revisions noted and required by the Engineer as coordinated with the Village's Landscape Architect prior to transmittal to the Owner.
  - b. Contractor is required to demonstrate completion of all revisions, which may include providing a revised copy for additional review at the discretion of the Engineer.

#### PART 4 – COMPATIBILITY

All work and components shall be compatible with the system installed as part of Contract 61E16. The Contractor shall coordinate all work regarding connecting to the existing system (including testing) with the Contractor for Contract 61E16.

#### PART 5 - MEASUREMENT AND PAYMENT

The work shall be paid for at the contract lump sum price each for IRRIGATION SYSTEM, which shall be payment in full for all work listed herein and as directed by the Engineer.



## **GENERAL ELECTRICAL REQUIREMENTS (VOS OCTOBER 4, 2018)**

This special provision replaces Articles 801.01 – 801.07, 801.09 – 801-16 of the Standard Specifications.

**Definition.** Codes, standards, and industry specifications cited for electrical work shall be by definition the latest adopted version thereof, unless indicated otherwise.

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

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

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

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

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

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

**Equipment Grounding Conductor.** All electrical systems, materials, and appurtenances shall be grounded. Good ground continuity throughout the electrical system shall be assured, even though every detail of the requirements is not specified or shown. Electrical circuits shall have a continuous insulated equipment grounding conductor. When metallic conduit is used, it shall be bonded to the equipment grounding conductor, but shall not be used as the equipment grounding conductor.

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

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

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

All connections to structural steel or fencing shall be made with exothermic welds. Care shall be taken not to weaken load carrying members. Where connections are made to epoxy coated reinforcing steel, the epoxy coating shall be sufficiently removed to facilitate a mechanical connection. The epoxy coating shall be repaired to the satisfaction of the Engineer. Where connections are made to insulated conductors, the connection shall be wrapped with at least four layers of electrical tape extended 6 in. (150 mm) onto the conductor insulation.

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

Major items shall include, but not limited to the following:

Type of Work (discipline)	Item
All Electrical Work	Electric Service Metering Emergency Standby System Transformers Cable Unit Duct Splices Conduit Surge Suppression System
Lighting	Tower Pole Luminaire Foundation Breakaway Device Controllers Control Cabinet and Peripherals
ITS	Controller Cabinet and Peripherals CCTV Cameras Camera Structures Ethernet Switches Detectors Detector Loop Fiber Optic Cable

Within 30 calendar days after contract execution, the Contractor shall submit, for approval, one copy each of the manufacturer's product data (for standard products and components) and detailed shop drawings (for fabricated items). Submittals for the materials for each individual pay item shall be complete in every respect. Submittals

which include multiple pay items shall have all submittal material for each item or group of items covered by a particular specification, grouped together and the applicable pay item identified. Various submittals shall, when taken together, form a complete coordinated package. A partial submittal will be returned without review unless prior written permission is obtained from the Engineer.

The submittal shall be properly identified by route, section, county, and contract number.

The Contractor shall have reviewed the submittal material and affixed his/her stamp of approval, with date and signature, for each individual item. In case of subcontractor submittal, both the subcontractor and the Contractor shall review, sign, and stamp their approval on the submittal.

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

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

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

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

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

Unless otherwise approved by the Engineer, all of the above items shall be submitted to the Engineer at the same time. Each item shall be properly identified by route, section, and contract number.

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

**Authorized Project Delay.** See Article 801.08

**Maintenance transfer and Preconstruction Inspection:**

General. Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall request a maintenance transfer and preconstruction site inspection, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance transfer and preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

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

Establish the approximate location and operating condition of lighting and/or traffic control systems which may be affected by the work

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

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

**Marking Proposed Locations for Highway Lighting System.** The Contractor shall mark or stake the proposed locations of all poles, cabinets, junction boxes, pull boxes,

handholes, cable routes, pavement crossings, and other items pertinent to the work. A proposed location inspection by the Engineer shall be requested prior to any excavation, construction, or installation work after all proposed installation locations are marked. Any work installed without location approval is subject to corrective action at no additional cost to the Department.

**Inspection of electrical work.** Inspection of electrical work shall be according to Article 105.12 and the following.

Before any splice, tap, or electrical connection is covered in handholes, junction boxes, light poles, or other enclosures, the Contractor shall notify and make available such wiring for the Engineer's inspection.

### **Maintenance and Responsibility During Construction.**

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

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

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

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

Emergency repairs shall be made by the Contractor, or as determined by the Engineer, the Department, or its agent. Non-emergency repairs shall be performed by the Contractor within six working days following discovery or notification. All repairs shall be performed in an expeditious manner to assure all electrical systems are operational

as soon as possible. The repairs shall be performed at no additional cost to the Department.

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

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

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

**Contractor shall hire a private company to conduct testing of entire lighting system. Testing by the contractor will not be accepted.**

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

- Voltage Tests
- Amperage Tests
- Insulation Resistance Tests
- Continuity tests
- Detector Loop Tests

Lighting systems. The following tests shall be made.

- (1) Voltage Measurements. Voltages in the cabinet from phase to phase and phase to neutral, at no load and at full load, shall be measured and recorded. Voltage readings at the last termination of each circuit shall be measured and recorded.
- (2) Insulation Resistance. Insulation resistance to ground of each circuit at the cabinet, with all loads connected, shall be measured and recorded.

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

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

- (3) Loads. The current of each circuit, phase main, and neutral shall be measured and recorded. The Engineer may direct reasonable circuit rearrangement. The current readings shall be within ten percent of the connected load based on material ratings.
- (4) Ground Continuity. Resistance of the system ground as taken from the farthest extension of each circuit run from the controller (i.e. check of equipment ground continuity for each circuit) shall be measured and recorded. Readings shall not exceed 2.0 ohms, regardless of the length of the circuit.
- (5) Resistance of Grounding Electrodes. Resistance to ground of all grounding electrodes shall be measured and recorded. Measurements shall be made with a ground tester during dry soil conditions as approved by the Engineer. Resistance to ground shall not exceed 10 ohms.

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

Detector Loops. Before and after permanently securing the loop in the pavement, the resistance, inductance, resistance to ground, and quality factor for each loop and lead-in circuit shall be tested. The loop and lead-in circuit shall have an inductance between 20 and 2500 microhenries. The resistance to ground shall be a minimum of 50 megohms under any conditions of weather or moisture. The quality factor (Q) shall be 5 or greater.

Fiber Optic Systems. Fiber optic testing shall be performed as required in the fiber optic cable special provision and the fiber optic splice special provision.

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

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

- (a) The manufacturer's standard written warranty for each piece of electrical material or apparatus furnished under the contract. The warranty for light emitting diode (LED) modules, including the maintained minimum luminance, shall cover a minimum of 60 months from the date of delivery.
- (b) The Contractor's written guarantee that, for a period of six months after the date of final acceptance of the work, all necessary repairs to or replacement of said warranted material or apparatus for reasons not proven to have been caused by negligence on the part of the user or acts of a third party shall be made by the Contractor at no additional cost to the Department.
- (c) The Contractor's written guarantee for satisfactory operation of all electrical systems furnished and constructed under the contract for a period of six months after final acceptance of the work.

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

**Record Drawings.** Alterations and additions to the electrical installation made during the execution of the work shall be neatly and plainly marked in red by the Contractor on the full-size set of record drawings kept at the Engineer's field office for the project. These drawings shall be updated on a daily basis and shall be available for inspection by the Engineer during the course of the work. The record drawings shall include the following:

- Cover Sheet
- Summary of Quantities, electrical items only
- Legends, Schedules and Notes
- Plan Sheet
- Pertinent Details
- Single Line Diagram
- Other useful information useful to locate and maintain the systems.

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

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

The inventory shall include:

- Location of Equipment, including rack, chassis, slot as applicable.
- Designation of Equipment
- Equipment manufacturer
- Equipment model number
- Equipment Version Number
- Equipment Configuration
  - Addressing, IP or other
  - Settings, hardware or programmed
- Equipment Serial Number

The following electronic inventory forms are available from the Engineer:

- Lighting Controller Inventory
- Lighting Inventory
- Light Tower Inspection Checklist
- ITS Location Inventory

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



When the work is complete, and seven days before the request for a final inspection, the set of contract drawings, 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's for review and approval.

In addition to the record drawings, PDF copies of the final catalog cuts which have been Approved and Approved as Noted with applicable follow-up shall be submitted along with the record drawings. The PDF files shall clearly indicate either by filename or PDF table of contents the respective pay item number. Specific part or model numbers of items which have been selected shall be clearly visible. Hard copies of the catalog are not required with this submittal.

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

Final documentation shall be submitted as a complete submittal package, i.e. record drawings, test results, inventory, etc. shall be submitted at the same time. Partial piecemeal submittals will be rejected without review. A total of five hardcopies and CDROMs of the final documentation shall be submitted.

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

- All light poles and light towers.
- Handholes and vaults.
- Junction Boxes
- Conduit roadway crossings.
- Controllers.
- Control Buildings.
- Structures with electrical connections, i.e. DMS, lighted signs.
- Electric Service locations.
- CCTV Camera installations.
- Roadway Surveillance installations.
- Fiber Optic Splice Locations.
- Fiber Optic Cables. Coordinates shall be recorded along each fiber optic cable route every 200 feet.
- All fiber optic slack locations shall be identified with quantity of slack cable included. When sequential cable markings are available, those markings shall be documented as cable marking into enclosure and marking out of enclosure.

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:

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

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

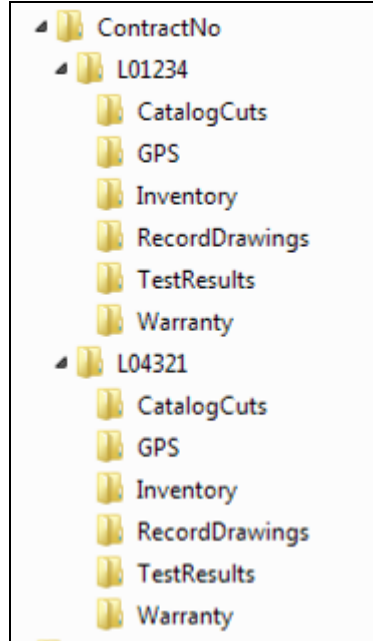
**Prior to the collection of data, the contractor shall provide a sample data collection of at least six data points of known locations to be reviewed and verified by the Engineer to be accurate within 20 feet.** Upon verification, data collection can begin. Data collection can be made as construction 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. **Data collection prior to the submittal and review of the sample data of existing data points will be unacceptable and rejected.**

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

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

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

The documents on the CD shall be organized by the Electrical Maintenance Contract Management System (EMCMS) location designation. If multiple EMCMS locations are within the contract, separate folders shall be utilized for each location as follows:



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

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

The Final Acceptance Documentation Checklist shall be completed and is contained elsewhere herein.

All CD's shall be labeled as illustrated in the CD Label Template contained herein.

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

**When the electrical work is complete, tested, and fully operational, the Contractor shall coordinate the 7 day burn in period for the entire system with the Engineer and Village Staff. At the end of the burn in period the systems shall be inspected for acceptance. Any failure in a system shall be repaired and the 7 day burn in for the entire system begins again. Maintenance transfer shall be completed upon Village acceptance of the inspection. The Contractor shall furnish the necessary labor and equipment to make the inspection**

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

**Final Acceptance Documentation Checklist**

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

ITEM	Contract or (Verify)	Resident Engineer (Verify)
<b>Record Drawings</b>		
-Four hardcopies (11" x 17")	<input type="checkbox"/>	<input type="checkbox"/>
-Scanned to two CD-ROMs	<input type="checkbox"/>	<input type="checkbox"/>
<b>Field Inspection Tests</b>		
-Voltage	<input type="checkbox"/>	<input type="checkbox"/>
-Amperage	<input type="checkbox"/>	<input type="checkbox"/>
-Cable Insulation Resistance	<input type="checkbox"/>	<input type="checkbox"/>
-Continuity	<input type="checkbox"/>	<input type="checkbox"/>
-Controller Ground Rod Resistance	<input type="checkbox"/>	<input type="checkbox"/>
(Four Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
<b>GPS Coordinates</b>		
-Excel file	<input type="checkbox"/>	<input type="checkbox"/>
(Check Special Provisions, Excel file scanned to two CD's)		
<b>Job Warranty Letter</b>		
(Four Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Catalog Cut Submittals</b>		
-Approved & Approved as Noted	<input type="checkbox"/>	<input type="checkbox"/>
(Scanned to two CD's)		
<b>Lighting Inventory Form</b>		
(Four Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Lighting Controller Inventory Form</b>		
(Four Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Light Tower Inspection Form</b>		
(If applicable, Four Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>

Four Hardcopies & scanned to two CD's shall be submitted for all items above. The CD ROM shall be labeled as shown in the example contained herein.

**General Notes:**

Record Drawings – The record drawings should contain contract cover sheet, summary of quantities showing all lighting pay item sheets, proposed lighting plans and lighting detail sheets. Submit hardcopies 11 x 17 size. Include the original “red-ink” copy. The red-ink markup should be neatly drawn. Record drawings copies should be legible. Blurred copies will not be acceptable. Temporary lighting plans and removal lighting plans should not be part of the set.

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

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

Job Warranty Letter – See standard specifications.

Cutsheet Submittal – See special provisions “General Electrical Requirements”. Scan Approved and Approved as Noted cutsheets.

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

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

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

CD LABEL FORMAT TEMPLATE.

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



## **ELECTRIC SERVICE INSTALLATION**

Effective: January 1, 2012

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

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

### **CONSTRUCTION REQUIREMENTS**

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

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

Method Of Measurement. Electric Service Installation shall be counted, each.

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

## **ELECTRIC UTILITY SERVICE CONNECTION (VOS)**

Description. This item shall consist of payment for work performed by ComEd in providing or modifying electric service as indicated. THIS MAY INVOLVE WORK AT MORE THAN ONE ELECTRIC SERVICE. For summary of the Electrical Service Drop Locations see the schedule contained elsewhere herein.

This item shall also consist of payment for work performed by the Village's electrical maintenance contractor associated with the transfer of the existing traffic signal installation or existing lighting installation to the Contractor.

### **CONSTRUCTION REQUIREMENTS**

General. It shall be the Contractor's responsibility to contact ComEd. The Contractor shall coordinate his work fully with the ComEd both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement. Please contact ComEd, New Business Center Call Center, at 866 NEW ELECTRIC (1-866-639-3532) to begin the service connection process. The Call Center Representatives will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of project.

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

It shall be the Contractor's responsibility to contact the Village to schedule the maintenance transfer. The Contractor shall coordinate his work fully with the Village's electrical maintenance contractor as to the work required and the timing of the transfer.

Method Of Payment. The Contractor will be reimbursed to the exact amount of money as billed by ComEd and/or the Village's maintenance contractor for their services. Work provided by the Contractor for electric service will be paid separately as described under ELECTRIC SERVICE INSTALLATION. Work provided by the Contractor for the temporary traffic signal work will be paid separately as described under the pay items TEMPORARY TRAFFIC SINGAL INSTALLATION and/or MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION. No extra compensation shall be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

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

Basis Of Payment. This work will be paid for at the contract lump sum price for ELECTRIC UTILITY SERVICE CONNECTION which shall be reimbursement in full for electric utility service charges and the Village's electrical maintenance contractor charges.



## **UNDERGROUND RACEWAYS**

Effective: March 1, 2015

Revise Article 810.04 of the Standard Specifications to read:

“Installation. All underground conduits shall have a minimum depth of 30-inches (700 mm) below the finished grade.”

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 300 mm (12”) 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 3 mm (0.125”) 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.”

**UNIT DUCT**

Effective: January 1, 2012

Revise the first paragraph of Article 810.04 to read:

“The unit duct shall be installed at a minimum depth of 30-inches (760 mm) unless otherwise directed by the Engineer.”

Revise Article 1088.01(c) to read:

“(c) Coilable Nonmetallic Conduit.

General:

The duct shall be a plastic duct which is intended for underground use and which can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance. The duct shall be a plastic duct which is intended for underground use and can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance.

The duct shall be made of high density polyethylene which shall meet the requirements of ASTM D 2447, for schedule 40. The duct shall be composed of black high density polyethylene meeting the requirements of ASTM D 3350, Class C, Grade P33. The wall thickness shall be in accordance with Table 2 for ASTM D 2447.

The duct shall be UL Listed per 651-B for continuous length HDPE coiled conduit. The duct shall also comply with NEC Article 354.100 and 354.120.

Submittal information shall demonstrate compliance with the details of these requirements.

Dimensions:

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

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

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

**Marking:**

As specified in NEMA Standard Publication No. TC-7, the duct shall be clearly and durably marked at least every 3.05 meters (10 feet) with the material designation (HDPE for high density polyethylene), nominal size of the duct and the name and/or trademark of the manufacturer.

**Performance Tests:**

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

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

**WIRE AND CABLE**

Effective: January 1, 2012

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

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

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

Aerial Electric Cable Properties

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

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

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

Revise Article 1066.04 to read:

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

Revise the second paragraph of Article 1066.05 to read:

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

## **MAINTENANCE OF LIGHTING SYSTEMS (VOS)**

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

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

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

The Engineer will document all test results and note deficiencies. All substandard equipment will be repaired or replaced by the existing maintenance contractor, or the Engineer can direct the Contractor to make the necessary repairs under Section 109.04.

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

### **Maintenance of Existing Lighting Systems**

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

#### **Extent of Maintenance.**

**Partial Maintenance.** Unless otherwise indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work, the Contractor needs only to maintain the affected circuits within the project limits. The project limits are defined as those limits indicated in the

contract plans. Equipment outside of the project limits, on the affected circuits shall be maintained and paid for under Article 109.04. The affected circuits shall be isolated by means of in-line waterproof fuse holders as specified elsewhere and as approved by the Engineer. The unaffected circuits and the controller will remain under the maintenance of the State.

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

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

### **Maintenance of Proposed Lighting Systems**

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

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

### **Lighting System Maintenance Operations**

The Contractor's responsibility shall include all applicable responsibilities of the Electrical Maintenance Contract, State of Illinois, Department of Transportation, Division of Highways, District One. These responsibilities shall include the maintenance of lighting units (including sign lighting), cable runs and lighting controls. In the case of a pole knockdown or sign light damage, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service. The equipment shall then be re-set by the contractor within the time limits specified herein.

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

beyond repair and cannot be re-set, the contractor shall replace the equipment in kind and the cost of the equipment shall be included in the cost of this pay item and shall not be paid for separately.

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

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

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

- **Service Response Time** -- amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.
- **Service Restoration Time** – amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)



- **Permanent Repair Time** – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

The Village 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. Unpaid bills will be deducted from any monies owed to the Contractor.

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

### **Operation of Lighting**

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

### **Method of Measurement**

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

**Basis of Payment.** Maintenance of lighting systems shall be paid for at the contract unit price per calendar month for **MAINTENANCE OF LIGHTING SYSTEM.**

## LUMINAIRE INSTALLATION (VOS)

Description. This work shall consist of furnishing and installing LED lighting unit as specified herein.

Materials. The luminaire shall be American Electric Lighting Autobahn Series ATB2 and shall be in compliance with ANSI C136.37. Model number ATB2 40BLEDE13 MVOLT R2 20-IL-BL-NL-HK-P7-SH

Material for the LED luminaire shall be according to the following.

### Optics

- IP66 rated
- Type II light distribution per IESNA classification.

### Performance

- Rated for -40°C to 40°C ambient air temperature range
- Color temperature of 4000K
- Fixture wattage of 177 watts

### Electronic Drivers

- Performance package for Luminaire Installation, Type 1 is 177 watt luminaire, 40B LED chips with drive current of 1300 mA and 18,277 lumens.
- LED light engines are rated > 100,000 hours at 25°C, L70. Electric driver has a rated life of 100,000 hours at a 25°C ambient.
- Minimum of ANSI C62.41 20V/10kA SPD level of surge protection with indicator light.

### Housing

- Autobahn Series ATB2 is 31" long x 14" wide x 4" high with an approximate weight of 21 lbs.
- Die cast aluminum housing.
- Color: Gray (color must be approved with local agencies before purchasing)
- The luminaire shall include a fully prewired, 7 pin twist lock ANSI C136-41 – compliant receptacle. Unused pins shall be connected as directed by the Manufacturer and approved by the Engineer. A shorting cap shall be provided with the luminaire.
- All luminaires shall be vibration tested and pass ANSI C136.31 requirements. Luminaires shall be rated for "3G" peak acceleration. Vibration testing shall be run using the same luminaire in all three axes.

### Finish

- Housing is polyester powder-coated for durability and corrosion resistance.
- Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 1,000 hours exposure to salt fog chamber (operate per ASTM B117)

### Warranty

- All electrical components warranted for minimum of 10 years

Submittal Requirements. The Contractor shall submit, for approval, an electronic version of all associated luminaire IES files, AGI32 files and the TM-21 or TM-28

calculator spreadsheet with inputs and reports associated with the project luminaires. The Contractor shall also provide (as a minimum) an electronic (PDF) version of each of the following manufacturer's product data for each type of luminaire:

1. Descriptive literature and catalogue cuts for luminaire, LED driver, and surge protection device.
2. LED drive current, total luminaire input wattage and total luminaire current at the system operating voltage or voltage range and ambient temperature of 25 C.
3. LED efficacy per luminaire expressed in lumens per watt (lpw).
4. Initial delivered lumens at the specified color temperature, drive current, and ambient temperature.
5. Computer photometric calculation reports as specified and in the luminaire performance table.
6. TM-15 BUG rating report.
7. Isofootcandle chart with max candela point and half candela trace indicated.
8. Documentation of manufacturers experience and verification that luminaires were assembled in the U.S.A. as specified.
9. Supporting documentation of compliance with ANSI standards as well as UL listing as specified.
10. Supporting documentation of laboratory accreditations and certifications for specified testing as indicated.
11. Thermal testing documents as specified.
12. IESNA LM-79, LM-80 (or LM-84) and TM-21 (or TM-28) reports as specified.
13. Salt fog test reports and certification as specified.
14. Vibration Characteristics Test Reports and certification as specified.
15. Ingress Protection Test Reports as specified.
16. Written warranty.

No luminaire testing according to Article 1067.01(h) will be required.

**IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE  
 ROADWAY LIGHTING**

**Luminaire Installation, Type 1**

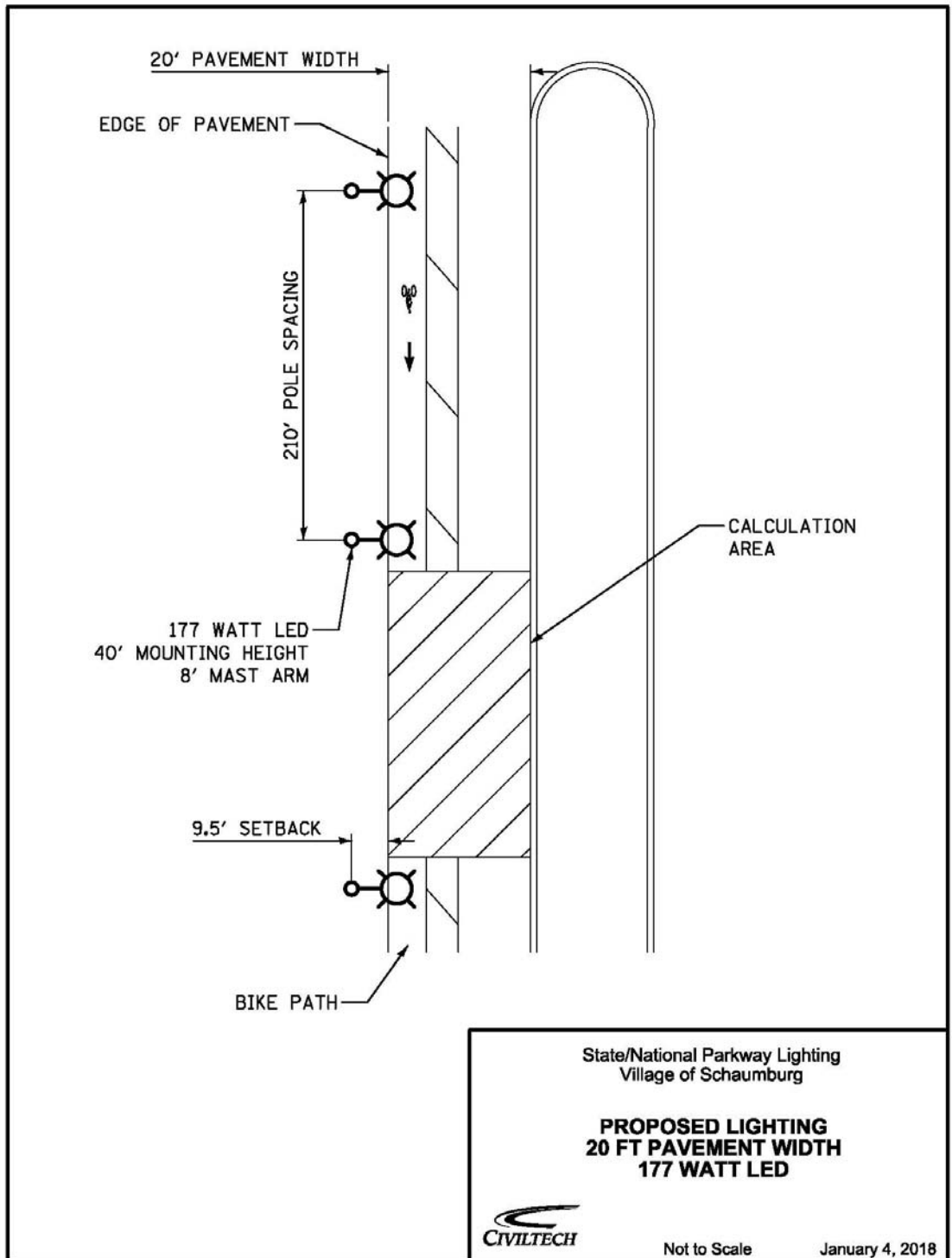
<b>GIVEN CONDITIONS</b>		
<b>ROADWAY DATA</b>	Pavement Width	20 (ft)
	Number of Lanes	2
	Median Width	none
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
<b>LIGHT POLE DATA</b>	Mounting Height	40 (ft)
	Mast Arm Length	8 (ft)
	Pole Set-Back From Edge Of Pavement	9.5 (ft)
<b>LUMINAIRE DATA</b>	Lumens	18,277
	BUG Rating	B3 – U0 – G3 (Max)
	I.E.S. Vertical Distribution	Medium
	I.E.S. Lateral Distribution	Type II
	Total Light Loss Factor	0.70
<b>LAYOUT DATA</b>	Spacing	210 (ft)
	Configuration	One Sided
	Luminaire Overhang over EOP	- (ft) 1.5

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

<b>PERFORMANCE REQUIREMENTS</b>
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**NOTE:** These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

<b>ROADWAY</b>	Average Luminance, $L_{AVE}$		Cd/m <sup>2</sup> (Max)
<b>LUMINANCE</b>		0.6	Cd/m <sup>2</sup> (Min)
	Uniformity Ratio, $L_{AVE}/L_{MIN}$	3.5	(Max)
	Uniformity Ratio, $L_{MAX}/L_{MIN}$	6.0	(Max)
	Veiling Luminance Ratio, $L_V/L_{AVE}$	0.4	(Max)



**IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE  
 ROADWAY LIGHTING**

**Luminaire Installation, Type 1**

<b>GIVEN CONDITIONS</b>		
<b>ROADWAY DATA</b>	Pavement Width	31 (ft)
	Number of Lanes	3
	Median Width	none
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
<b>LIGHT POLE DATA</b>	Mounting Height	40 (ft)
	Mast Arm Length	8 (ft)
	Pole Set-Back From Edge Of Pavement	9.5 (ft)
<b>LUMINAIRE DATA</b>	Lumens	18,277
	BUG Rating	B3 – U0 – G3 (Max)
	I.E.S. Vertical Distribution	Medium
	I.E.S. Lateral Distribution	Type II
	Total Light Loss Factor	0.70
<b>LAYOUT DATA</b>	Spacing	180 (ft)
	Configuration	One Sided
	Luminaire Overhang over EOP	- (ft) 1.5

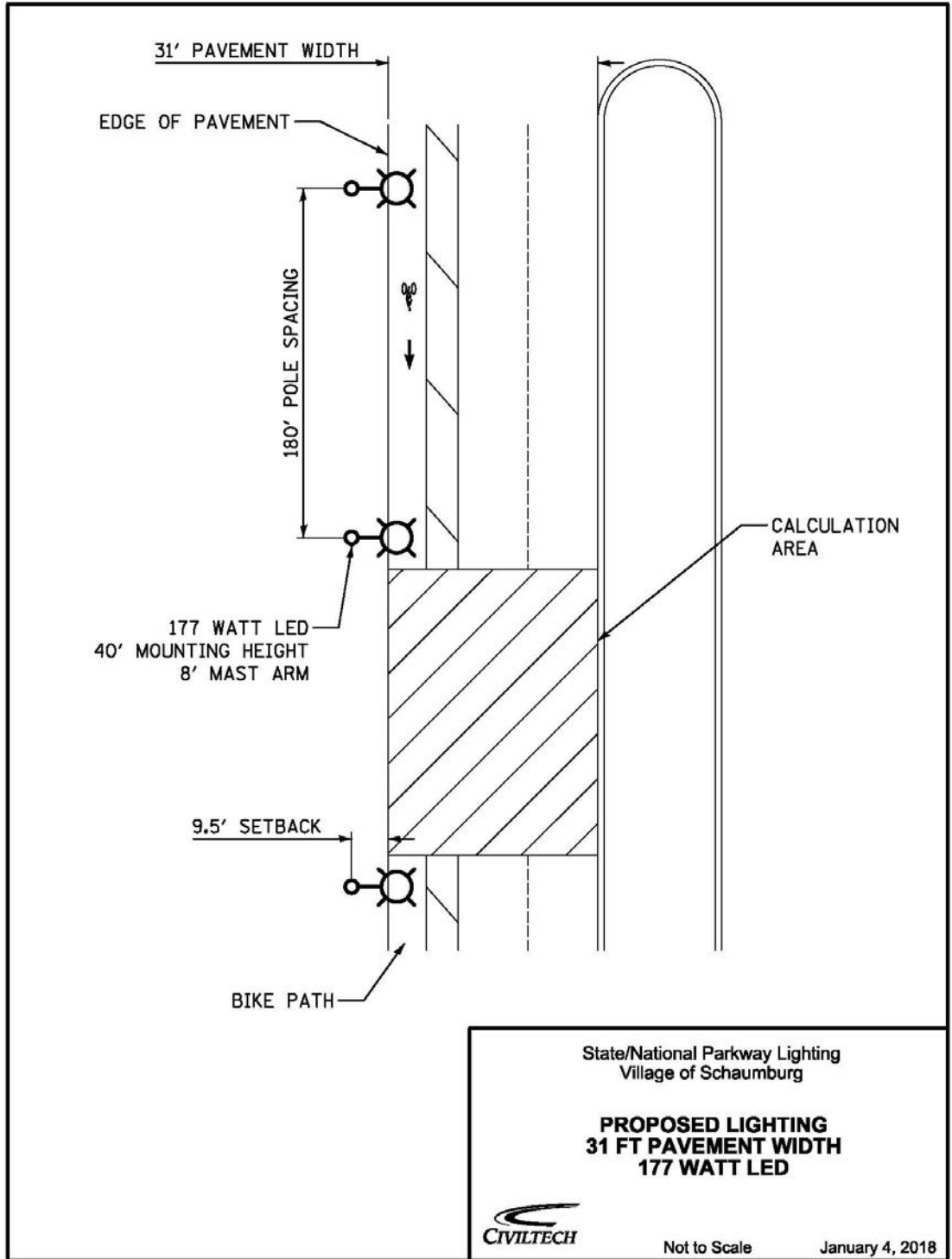
**NOTE:** Variations from the above specified I.E.S. distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

<b>PERFORMANCE REQUIREMENTS</b>
---------------------------------

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

<b>ROADWAY</b>	Average Luminance, $L_{AVE}$		Cd/m <sup>2</sup> (Max)
<b>LUMINANCE</b>		0.6	Cd/m <sup>2</sup> (Min)
	Uniformity Ratio, $L_{AVE}/L_{MIN}$	3.5	(Max)
	Uniformity Ratio, $L_{MAX}/L_{MIN}$	6.0	(Max)
	Veiling Luminance Ratio, $L_V/L_{AVE}$	0.4	(Max)





Installation.

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

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

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

Pole wiring shall be provided with the luminaire. Pole wire shall run from handhole to luminaire.

Pole wire shall be sized No. 10, rated 600 V, RHW/USE-2, and have copper conductors, stranded in conformance with ASTM B 8. Pole wire shall be insulated with cross-linked polyethylene (XLP) insulation. Wire shall be trained within the pole or sign structure so as to avoid abrasion or damage to the insulation.

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

Included with the pole wiring shall be fusing located in the handhole. Fusing shall be according to Article 1065.01 with the exception that fuses shall be 5 ampere.

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

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

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

and tapped through the tenon and luminaire mounting bracket and then fitted with the screw.

Basis of Payment. This work will be paid for at the contract unit price per each as LUMINAIRE INSTALLATION, TYPE 1; as specified in the contract plans which shall include all labor, material and equipment necessary to complete the work as specified.

### **LIGHTING CONTROLLER, BASE MOUNTED, 480 VOLT, 100 AMP (VOS)**

Description. This item shall consist of furnishing and installing a Lighting Controller complete with all circuit breakers and appurtenances as shown on the plans, in accordance with Section 825 of the Standard Specifications, NEC and as specified herein.

The side of the cabinet with the door shall be oriented opposite of traffic and the door hinge shall be on the downstream side of the cabinet so that the door, when open, does not block the view of oncoming traffic. Contractor shall confirm with the Engineer prior to installing the foundation.

The lighting controller shall be installed on a concrete foundation. The controller shall be mounted plumb and level on the foundation. The controller shall be fastened to the foundation with anchor rods using hot dipped galvanized or stainless steel nuts and washers. The base of the controller cabinet shall be caulked with silicone where it meets the foundation. All conduit entrances shall be sealed with a pliable waterproof material.

The controller cabinet shall be a single door type fabricated from 0.125 inch type 5052-H32 aluminum. The cabinet shall have a vent designed to keep moisture, dirt and insects out. The cabinet door frame shall be double flanged on all four sides. All external hardware shall be stainless steel. The cabinet shall have a NEMA 3R rating. The door shall be equipped with a three point latching mechanism with nylon rollers top and bottom. The handle shall be stainless steel and have a provision for a padlock. The door shall be sealed with a neoprene gasket. The hinge shall be a continuous hinge with a 1/4" diameter stainless steel hinge pin. The door shall have a linkage arm system capable of holding the door in a wide open position. The lock shall be a rain and ice resistant standard traffic signal lock with two keys.

Aluminum enclosures shall be painted per the manufacturer's recommendations. Color shall be green and approved by the Village of Schaumburg prior to fabrication.

The cabinet door shall have a stainless steel name plate as shown in the contract documents.

The lighting controller shall have the components shown in the contract documents. The type of wire in the lighting controller is #12 AWG, 600V type 'SIS' strand copper gray switch board wire. Components shall be sized properly for the given load. The

contractor shall be Square D 8903SQ01V02. All controllers shall have provisions for the installation of four additional circuits at a future date.

A meter will be installed on the hinged side of the cabinet.

A ground rod shall be provided at the controller. Grounding of the electric system shall be in conformance with the applicable requirements of the National Electrical Code (NEC) and the Village of Schaumburg electrical code.

The cabinet shall be labeled with the appropriate arc flash warning and personnel protection equipment required for servicing.

Submittal of Drawings. The Contractor shall furnish, prior to any shop work or fabrication, complete and detailed drawings as to dimensions, type of material and method of fabrication for the control cabinet, equipment mounting panel, arrangement of equipment on panels, bus bar sizes, wire or cable sizes for connections between main breaker, automatic switches, photo electric cell, circuit breakers, H-O-A switch, all appurtenances as shown on the plans, and any other equipment as may be necessary for proper operation and control of the lighting system.

Basis of Payment. This work will be paid for at the contract unit price each for LIGHTING CONTROLLER, BASE MOUNTED, 480 VOLT, 100 AMP, which price shall be payment in full for furnishing and placing Class "SI" concrete foundation with rigid steel conduit for cable entrance and grounding of equipment; Class "SI" concrete pad (if required); furnishing and placing ground rod; furnishing and placing fabricated cabinet complete with equipment panels and all necessary switch gear, appurtenances and wiring of same as indicated on the plans; furnishing, installing and connecting the photo-electric cells; and shall include all labor, materials, tools and incidentals necessary to complete and test the operation of the control cabinet as herein specified and as shown on the plans.

## **REMOVAL OF LIGHTING UNIT, SALVAGE (VOS)**

Description. This work shall consist of the removal of existing lighting system as described in Section 842 of the Standard Specification and as specified herein and shown in the contract plans.

The poles, mast arms, luminaires and cables in the light poles shall be removed and shall remain the property of the Village of Schaumburg. These items shall be delivered and unloaded at the Village of Schaumburg Public Works 714 Plum Grove Road, Schaumburg or as directed by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per each for REMOVAL OF LIGHTING UNIT, SALVAGE, and shall include all labor, material and equipment necessary to perform the work as specified in the plan documentation and as herein specified.

### **RREMOVAL OF POLE FOUNDATION (VOS)**

**Description.** This work shall consist of the removal and disposal of existing lighting foundations according to Section 842 of the Standard Specification and as herein specified.

The existing concrete foundation shall be completely removed. The removed material shall be disposed of according to Article 202.03 and the void caused by the removal of the foundation shall be backfilled according to Article 841.02.

Basis of Payment. This work shall be paid for at the contract unit price per each for REMOVAL OF POLE FOUNDATION, which price shall include all labor, material and equipment necessary to perform the work as specified herein.

### **REMOVE ELECTRIC CABLE FROM CONDUIT (VOS)**

Description. This work shall consist of removing existing electric cable as described in Section 895 of the Standard Specification and as specified herein.

All existing electric cable removed from conduit shall be remain the property of the Village of Schaumburg. The cable shall be delivered and unloaded at the Village of Schaumburg Public Works 714 Plum Grove Road, Schaumburg or as directed by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per foot for REMOVE ELECTRIC CABLE FROM CONDUIT, and shall include all labor, material and equipment necessary to perform the work as specified in the plan documentation and as herein specified.

### **REMOVE EXISTING LIGHTING CONTROLLER AND SALVAGE (VOS)**

Description. This work shall consist of the removal of existing lighting controller as described in Section 845 of the Standard Specification except as specified herein.

The lighting controller cabinet, including enclosed electrical equipment, shall be removed without being damaged. The lighting controller shall remain the property of the Village of Schaumburg and shall be delivered and unloaded at the Village of Schaumburg Public Works, 714 Plum Grove Road, Schaumburg or as directed by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per each for REMOVE EXISTING LIGHTING CONTROLLER AND SALVAGE, and shall include all labor, material and equipment necessary to perform the work as specified in the plan documentation and as herein specified.

### **LIGHT POLE FOUNDATION, 24" DIAMETER, OFFSET (VOS)**

Description. This work shall consist of excavating, constructing, and backfilling offset light pole foundations in accordance with Section 836 of the Standard Specifications except as specified herein this special provision, and the details shown in the plans. Offset foundations shall be installed at locations where the utility conflict can be resolved by laterally offsetting the drilled shaft of the foundation.

The determination of foundation type shall be made in the field by the Engineer, based upon the actual locations of utilities. Payment will be made according quantity of each foundation type installed, and no additional compensation will be allowed for subtractions or additions to contract quantities for the various foundation types.

Excavation, including shoring, material disposal, and pumping, bailing or otherwise draining the excavated area shall not be paid for separately, but shall be included in the contract unit price for offset foundations.

Backfilling and thoroughly compacting material conforming to Article 1004 and shall not be paid for separately, but shall be considered as included in the contract unit price for offset foundations. Concrete shall cure in accordance with Article 1020.13 before being backfilled.

Basis of Payment. Offset foundations will be measured for payment in accordance with Article 836.04 of the Standard Specifications, and paid at the contract unit price per foot for LIGHT POLE FOUNDATION, 24" DIAMETER, OFFSET.

### **LIGHT POLE FOUNDATION, SPECIAL (VOS)**

Description. This work shall consist of furnishing and installing a light pole foundation in accordance with Section 836 of the Standard Specifications for Metal Foundations and the details shown in the plans.

The metal foundation will be 15" bolt circle diameter with the shaft diameter of 8 5/8" and shaft length of 8 ft.

Basis of Payment. This work will be paid for at the contract unit price per each for LIGHT POLE FOUNDATION, SPECIAL, and shall include all material, labor and equipment necessary to perform the work as specified in the plan documentation and as herein specified.

### **TEMPORARY LIGHTING CONTROLLER (VOS)**

Description. This work shall consist of furnishing and installing an electrical controller as specified in Section 825 of the Standard Specifications and as specified herein.

The temporary lighting controller shall be 120/240 volt, 100 amps, single phase and 3 wires. The enclosure and control components may be used (not new) but must be able

to function properly and safely according to Section 1068 of the Standard Specification and the National Electrical Code (NEC). The temporary lighting will be controlled by photocell mounted on the cabinet, there will be 8 - 30 amp double pole circuit breakers, and the cabinet and control components must be grounded.

The removal of the temporary lighting controller shall not be paid for separately but shall be included in this pay item. The temporary lighting controller shall not be removed until the proposed lighting is in place and the proposed lighting controller is functioning.

Basis of Payment. This work will be paid for at the contract unit price per each for TEMPORARY LIGHTING CONTROLLER, and shall include all material, labor and equipment necessary to perform the work as specified in the plan documentation and as herein specified.

### **TEMPORARY WOOD POLE (VOS)**

Description. This work shall consist of furnishing and installing a temporary wood pole according to Section 830 of the Standard Specifications and as specified herein and shown in the plans.

The wood pole material shall be according to Illinois Department of Transportation Standard Specifications for Road and Bridge Construction in Article 1069.04. The wood pole shall be installed according to Illinois Department of Transportation Standard Specifications for Road and Bridge Construction in Article 830.03 (c) and 830.04.

When specified in the contract plans, a 15 foot truss style mast arm shall be installed on a temporary wood pole with all the necessary hardware and accessories required. The mast arm shall be set at right angles to the centerline of the pavement.

Basis of Payment. This work will be paid for at the contract unit price per each for TEMPORARY WOOD POLE, 40 FT., CLASS 4; or TEMPORARY WOOD POLE, 50 FT., CLASS 4, 15 FT MAST ARM, which price shall be payment in full for the material including guy wire, excavation, labor, and equipment necessary to complete the work described herein.

### **TEMPORARY LUMINAIRE (VOS)**

Description. This work shall consist of furnishing and installing a temporary luminaire per Section 821 except as revised in this special provision and the details in the plan.

Add the following to first paragraph of Article 1067(c) of the Standard Specifications:

“The reflector shall not be altered by paint or other opaque coatings which would cover or coat the reflecting surface. Control of the light distribution by any method other than the reflecting material and the aforementioned clear protective coating that will alter the reflective properties of the reflecting surface is unacceptable”

Add the following to Article 1067(f) of the Standard Specifications:

“The ballast shall be a High Pressure Sodium, high power factor, constant wattage auto-regulator, lead type (CWA) for operation on a nominal 240 volt system.”

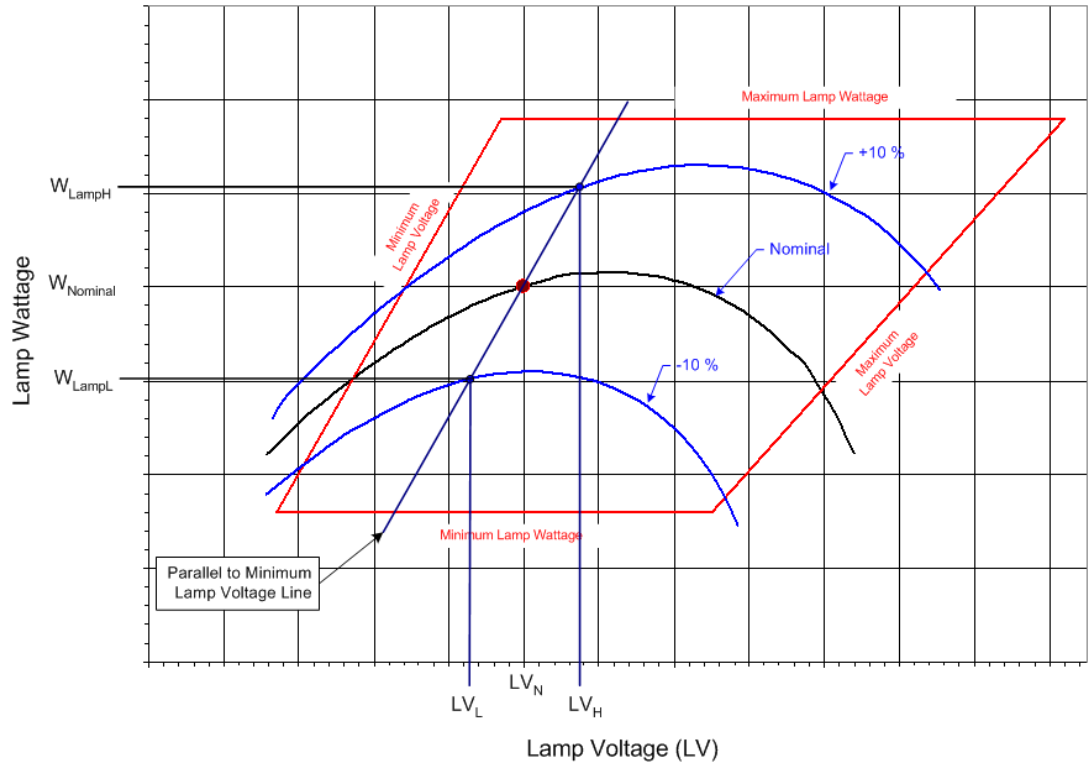
Revise Article 1067(f)(1) of the Standard Specifications to read:

“The high pressure sodium, auto-regulator, lead type (CWA) ballast shall be designed to ANSI Standards and shall be designed and rated for operation on a nominal 240 volt system. The ballast shall provide positive lamp ignition at the input voltage of 216 volts. It shall operate the lamp over a range of input voltages from 216 to 264 volts without damage to the ballast. It shall provide lamp operation within lamp specifications for rated lamp life at input design voltage range. Operating characteristics shall produce output regulation not exceeding the following values:

<b>Nominal Ballast Wattage</b>	<b>Maximum Ballast Regulation</b>
750	25%
400	26%
310	26%
250	26%
150	24%
70	18%

For this measure, regulation shall be defined as the ratio of the lamp watt difference between the upper and lower operating curves to the nominal lamp watts; with the lamp watt difference taken within the ANSI trapezoid at the nominal lamp operating voltage point parallel to the minimum lamp volt line:





$$\text{Ballast Regulation} = \frac{W_{LampH} - W_{LampL}}{W_{LampN}} \times 100$$

where:

$W_{LampH}$  = lamp watts at +10% line voltage when Lamp voltage =  $LV_H$

$W_{LampL}$  = lamp watts at - 10% line voltage when lamp voltage =  $LV_L$

$W_{lampN}$  = lamp watts at nominal lamp operating voltage =  $LV_N$

Wattage	Nominal Lamp Voltage, $LV_N$	$LV_L$	$LV_H$
750	120v	115v	125v
400	100v	95v	105v
310	100v	95v	105v
250	100v	95v	105v
150	55v	50v	60v
70	52v	47v	57v

Ballast losses, based on cold bench tests, shall not exceed the following values:

Nominal Ballast Wattage	Maximum Ballast Losses
750	15%
400	20%
310	21%
250	24%
150	26%
70	34%

Ballast losses shall be calculated based on input watts and lamp watts at nominal system voltage as indicated in the following equation:

$$\text{Ballast Losses} = \frac{W_{Line} - W_{Lamp}}{W_{Lamp}} \times 100$$

where:

$W_{line}$  = line watts at nominal system voltage

$W_{lamp}$  = lamp watts at nominal system voltage

Ballast output to lamp. At nominal system voltage and nominal lamp voltage, the ballast shall deliver lamp wattage with the variation specified in the following table.

Nominal Ballast Wattage	Output to lamp variation
750	± 7.5%
400	± 7.5%
310	± 7.5%
250	± 7.5%
150	± 7.5%
70	± 7.5%

Example: For a 400w luminaire, the ballast shall deliver 400 watts ±7.5% at a lamp voltage of 100v for the nominal system voltage of 240v which is the range of 370w to 430w.

Ballast output over lamp life. Over the life of the lamp the ballast shall produce average output wattage of the nominal lamp rating as specified in the following table. Lamp wattage readings shall be taken at 5-volt increments throughout the ballast trapezoid. Reading shall begin at the lamp voltage (L<sub>v</sub>) specified in the table and continue at 5 volt increments until the right side of the trapezoid is reached. The lamp wattage values shall then be averaged and shall be within the specified value of the nominal ballast rating. Submittal documents shall include a tabulation of the lamp wattage vs. lamp voltage readings.

<b>Nominal Ballast Wattage</b>	<b>LV Readings begin at</b>	<b>Maximum Wattage Variation</b>
750	110v	± 7.5%
400	90v	± 7.5%
310	90v	± 7.5%
250	90v	± 7.5%
150	50v	± 7.5%
70	45v	± 7.5%

*Example: For a 400w luminaire, the averaged lamp wattage reading shall not exceed the range of ±7.5% which is 370w to 430w*

Delete Article 1067.01(h) of the Standard Specifications.

Revise Article 1067.06(a)(1) of the Standard Specifications to read:

“The lamps shall be of the clear type and shall have a color of 1900° to 2200° Kelvin.”

**Basis of Payment.** This work will be paid for at the contract unit price per each for TEMPORARY LUMINAIRE, HIGH PRESSURE SODIUM VAPOR, HORIZONTAL MOUNT, 250 WATT.

**TEMPORARY ELECTRIC SERVICE INSTALLATION (VOS)**

**Description.** This work shall consist of all material and labor required to extend, connect or modify the electric services, as indicated or specified, which are over and above the work performed by the utility. This work shall be conducted according to Section 804 of the Standard Special Provision as specified herein.

The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work not included by other contract pay items required

to complete the electric service work in complete compliance with the requirements of the utility. Materials shall be in accordance with the Standard Specifications.

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

The removal of the temporary electric service installation shall not be paid for separately but shall be included in this pay item.

**Basis of Payment.** This work shall be paid for at the contract unit price per each for TEMPORARY ELECTRIC SERVICE INSTALLATION, which price shall include all labor, material and equipment necessary to perform the work as specified herein. This item may apply to the work at more than one service location and each will be paid for separately.

**LIGHT POLE, ALUMINUM, 40 FT. M.H., 8 FT. MAST ARM (MATERIAL ONLY) (VOS)**

Description. This work shall consist of furnishing a light pole complete with an arm for this project as described in the specifications and the details shown in the contract plans. The poles shall be delivered to the Village of Schaumburg Public Works Department or as directed by the Engineer.

Basis of Payment. This item shall be paid for at the contract unit price each for LIGHT POLE, ALUMINUM, 40 FT. M.H., 8 FT. MAST ARM (MATERIAL ONLY).

**LUMINAIRE, TYPE 1 (MATERIAL ONLY) (VOS)**

Description. This work shall consist of furnishing LED luminaires of the type specified for this project as described in the specifications and the details shown in the contract plans. The luminaires shall be delivered to the Village of Schaumburg Public Works Department or as directed by the Engineer.

The luminaire shall be as described in the Luminaire Installation specification.

Basis of Payment. This item shall be paid for at the contract unit price each for LUMINAIRE, TYPE 1 (MATERIAL ONLY).

**LIGHT POLE FOUNDATION, METAL, 15" BOLT CIRCLE, 8 5/8" X 6' (MATERIAL ONLY) (VOS)**

Description. This work shall consist of furnishing metal light pole foundations of the bolt circle and shaft size specified and as shown in the plan details. The metal foundations shall be delivered to the Village of Schaumburg Public Works Department or as directed by the Engineer.

The metal foundation will be 15" bolt circle diameter with the shaft diameter of 8 5/8" and shaft length of 6 ft.

Basis of Payment. This item shall be paid for at the contract unit price each for LIGHT POLE FOUNDATION, METAL, 15" BOLT CIRCLE, 8 5/8" x 6' (MATERIAL ONLY).

**BREAKAWAY DEVICE, TRANSFORMER BASE, 15 INCH BOLT CIRCLE (MATERIAL ONLY) (VOS)**

Description. This work shall consist of furnishing transformer base breakaway device of the bolt circle specified and as shown in the plan details. The breakaway devices shall be delivered to the Village of Schaumburg Public Works Department or as directed by the Engineer.

Basis of Payment. This item shall be paid for at the contract unit price each for BREAKAWAY DEVICE, TRANSFORMER BASE, 15 INCH BOLT CIRCLE (MATERIAL ONLY).

## **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 pf 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 herein.

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 Contractor 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:

Date	Item	Description	Latitude	Longitude
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.



## **RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM**

Effective: May 22, 2002

Revised: July 1, 2015

800.03TS

### Description.

This work shall consist of re-optimizing a closed loop traffic signal system according to the following Levels of work.

LEVEL I applies when improvements are made to an existing signalized intersection within an existing closed loop traffic signal system. The purpose of this work is to integrate the improvements to the subject intersection into the signal system while minimizing the impacts to the existing system operation. This type of work would be commonly associated with the addition of signal phases, pedestrian phases, or improvements that do not affect the capacity at an intersection.

LEVEL II applies when improvements are made to an existing signalized intersection within an existing closed loop traffic signal system and detailed analysis of the intersection operation is desired by the engineer, or when a new signalized or existing signalized intersection is being added to an existing system, but optimization of the entire system is not required. The purpose of this work is to optimize the subject intersection, while integrating it into the existing signal system with limited impact to the system operations. This item also includes an evaluation of the overall system operation, including the traffic responsive program.

For the purposes of re-optimization work, an intersection shall include all traffic movements operated by the subject controller and cabinet.

After the signal improvements are completed, the signal shall be re-optimized as specified 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. Traffic signal system optimization work, including fine-tuning adjustments of the optimized system, shall follow the requirements stated in the most recent IDOT District 1 SCAT Guidelines, except as note herein.

A listing of existing signal equipment, interconnect information, phasing data, and timing patterns may be obtained from the Department, if available and as appropriate. The existing SCAT Report is available for review at the District One office and if the Consultant provides blank computer discs, copies of computer simulation files for the existing optimized system and a timing database will be made for the Consultant. The Consultant shall confer with the Traffic Signal Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system, in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the optimization.

(a) LEVEL I Re-Optimization

1. The following tasks are associated with LEVEL I Re-Optimization.
  - a. Appropriate signal timings shall be developed for the subject intersection and existing timings shall be utilized for the rest of the intersections in the system.
  - b. Proposed signal timing plan for the modified intersection(s) shall be forwarded to IDOT for review prior to implementation.
  - c. Consultant shall conduct on-site implementation of the timings at the turn-on and make fine-tuning adjustments to the timings of the subject intersection in the field to alleviate observed adverse operating conditions and to enhance operations. The consultant shall respond to IDOT comments and public complaints for a minimum period of 60 days from date of timing plan implementation.
2. The following deliverables shall be provided for LEVEL I Re-Optimization.
  - a. Consultant shall furnish to IDOT a cover letter describing the extent of the re-optimization work performed.
  - b. Consultant shall furnish an updated intersection graphic display for the subject intersection to IDOT and to IDOT's Traffic Signal Maintenance Contractor.

(b) LEVEL II Re-Optimization

1. In addition to the requirements described in the LEVEL I Re-Optimization above, the following tasks are associated with LEVEL II Re-Optimization.
  - a. Traffic counts shall be taken at the subject intersection(s) after the traffic signals are approved for operation by the Area Traffic Signal Operations Engineer. Manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m., and 3:30 p.m. to 6:30 p.m. on a typical weekday from midday Monday to midday Friday and on a Saturday and/or Sunday, as directed by the Engineer, to account for special traffic generators such as shopping centers, educational institutes and special event facilities. The turning movement counts shall identify cars, and single-unit, multi-unit heavy vehicles, and transit buses.
  - b. As necessary, the intersection(s) shall be re-addressed and all system detectors reassigned in the master controller according to the current standard of District One.
  - c. Traffic responsive program operation shall be evaluated to verify proper pattern selection and lack of oscillation and a report of the operation shall be provided to IDOT.
2. The following deliverables shall be provided for LEVEL II Re-Optimization.
  - a. Consultant shall furnish to IDOT one (1) copy of a technical memorandum for the optimized system. The technical memorandum shall include the following elements:
    - (1) Brief description of the project
    - (2) Printed copies of the analysis output from Synchro (or other appropriate, approved optimization software file)
    - (3) Printed copies of the traffic counts conducted at the subject intersection
  - b. Consultant shall furnish to IDOT two (2) CDs for the optimized system. The CDs shall include the following elements:
    - (1) Electronic copy of the technical memorandum in PDF format

- (2) Revised Synchro files (or other appropriate, approved optimization software file) including the new signal and the rest of the signals in the closed loop system
- (3) Traffic counts conducted at the subject intersection(s)
- (4) New or updated intersection(s) graphic display file for the subject intersection(s)
- (5) The CD shall be labeled with the IDOT system number and master location, as well as the submittal date and the consultant logo. The CD case shall include a clearly readable label displaying the same information securely affixed to the side and front.

Basis of Payment.

This work shall be paid for at the contract unit price each for RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM – LEVEL I or RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM – LEVEL II, which price shall be payment in full for performing all work described herein per intersection. Following completion of the timings and submittal of specified deliverables, 100 percent of the bid price will be paid. Each intersection will be paid for separately.

## **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 .

## **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: July 1, 2015

810.02TS

Revise Article 810.04 of the Standard Specifications to read:

“Installation. All underground conduits shall have a minimum depth of 30-inches (700 mm) below the finished grade.”

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 300 mm (12”) 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 3 mm (0.125”) 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.”

## **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 deactivated 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 EXISTING FLASHING BEACON INSTALLATION. Each flashing beacon will be paid for separately.

**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.

## **CONCRETE FOUNDATIONS**

Effective: May 22, 2002

Revised: July 01, 2015

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. (300 mm) at the threaded end.

Foundations used for Combination Mast Arm Poles shall provide an extra 2-1/2 inch (65 mm) raceway.

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 price shall include a concrete apron in front of the cabinet and UPS as shown in the plans or as directed by the engineer.

## **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.



## **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.

## **RADAR VEHICLE DETECTION SYSTEM**

Effective: July 01, 2015

Revised: May 9, 2017

886.03TS

### Description.

This work shall consist of furnishing and installing a radar vehicle detection system as specified and/or as shown on the plan. 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, cable and accessories required to complete the installation in accordance with the manufacturer's specifications.

The radar 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. It shall have a max power output of 75 watts or less.

The radar 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 radar 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 stop bar radar vehicle detection system shall have true presence capabilities in which it can detect stopped, slow moving or turning vehicles similar to the Departments in-pavement detection. This is especially important at side streets where driveways are near the intersection. The radar shall be able to drop the call if the vehicle leaves the detection zone. A manufacture statement confirming proper operation is required along each catalog cut submittal. The Department will not allow substitutes for other types of detection.

The far back radar detection shall have a detection range of 400 feet or better.

A representative from the supplier of the radar vehicle detection system shall supervise the installation and testing of the radar vehicle detection system and shall be present at the traffic signal turn-on inspection. Once the radar 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 radar vehicle 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 RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, STOP BAR; RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, FAR BACK; RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, STOP BAR AND FAR BACK, 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 radar vehicle detection system.

## **PEDESTRIAN PUSH-BUTTON**

Effective: May 22, 2002

Revised: July 1, 2015

888.01TS

### Description.

Revise Article 888.01 of the Standard Specifications to read:

This work shall consist of furnishing and installing a latching (single call) or non-latching (dual call) pedestrian push-button and a regulatory pedestrian instruction sign according to MUTCD, sign series R10-3e 9" x 15" sign with arrow(s) for a count-down pedestrian signal. The pedestrian station sign size without count-down pedestrian signals shall accommodate a MUTCD sign series R10-3b or R10-3d 9" x 12" sign with arrow(s).

### Installation.

Add the following to Article 888.03 of the Standard Specifications:

A mounting bracket and/or extension shall be used to assure proper orientation when two pedestrian push buttons are required for one post. The price of the bracket and/or extension shall be included in the cost of the pedestrian push button. The contractor is not allowed to install a push-button assembly with the sign below the push-button in order to meet mounting requirements.

### Materials.

Revise Article 1074.02(a) of the Standard Specifications to read:

The pedestrian push-button housing shall be constructed of aluminum alloy according to ASTM B 308 6061-T6 and powder coated yellow, unless otherwise noted on the plans. The housing shall be furnished with suitable mounting hardware.

Revise Article 1074.02(e) of the Standard Specifications to read:

Stations shall be designed to be mounted to a post, mast arm pole or wood pole. The station shall be aluminum and shall accept a 3 inch (75mm) round push-button assembly and a regulatory pedestrian instruction sign according to MUTCD, sign series R10-3e 9" x 15" sign with arrow(s) for a count-down pedestrian signal. The pedestrian station size without count-down pedestrian signals shall accommodate a MUTCD sign series R10-3b or R10-3d 9" x 12" sign with arrow(s).

Add the following to Article 1074.02 of the Standard Specifications:

- (f) Location. Pedestrian push-buttons and stations shall be mounted to a post, mast arm pole or wood pole as shown on the plans and shall be fully ADA accessible from a paved or concrete surface. See the District's Detail sheets for orientation and mounting details.

### Basis of Payment.

Revise Article 888.04 of the Standard Specifications to read:

This work will be paid for at the contract unit price per each for PEDESTRIAN PUSH-BUTTON or PEDESTRIAN PUSH-BUTTON, NON-LATCHING.

## **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 UNINTERRUPTABLE 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.

## **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.

## **MODIFY EXISTING CONTROLLER CABINET**

Effective: May 22, 2002

Revised: July 1, 2015

895.01TS

The work shall consist of modifying an existing controller cabinet as follows:

- (a) Uninterruptable Power Supply (UPS). The addition of uninterruptable power supply (UPS) to an existing controller cabinet could require the relocation of the existing controller cabinet items to allow for the installation of the uninterruptable power supply (UPS) components inside the existing controller cabinet as outlined under Sections 862 and 1074.04 of the Standard Specifications and the wiring of UPS alarms.
- (b) Light Emitting Diode (LED) Signal Heads, Light Emitting Diode (LED) Optically Programmed Signal Heads and Light Emitting Diode (LED) Pedestrian Signal Heads. The contractor shall verify that the existing load switches meet the requirements of Section 1074.03(b)(2) of the Standard Specifications and the recommended load requirements of the light emitting diode (LED) signal heads that are being installed at the existing traffic signal. If any of the existing load switches do not meet these requirements, they shall be replaced, as directed by the Engineer.
- (c) Light Emitting Diode (LED), Signal Head, Retrofit. The contractor shall verify that the existing load switches meet the requirements of Section 1074.03(b)(2) of the Standard Specifications and the recommended load requirements of light emitting diode (LED) traffic signal modules, pedestrian signal modules, and pedestrian countdown signal modules as specified in the plans. If any of the existing load switches do not meet these requirements, they shall be replaced, as directed by the Engineer.
- (d) This item shall include the upgrade of all non-railroad controller software to the latest version available at the time of the signal TURN-ON.

### Basis of Payment.

Modifying an existing controller cabinet will be paid for at the contract unit price per each for MODIFY EXISTING CONTROLLER CABINET. This shall include all material and labor required to complete the work as described above, the removal and disposal of all items removed from the controller cabinet, as directed by the Engineer. The equipment for the Uninterruptable Power Supply (UPS) and labor to install it in the existing controller cabinet shall be included in the pay item Uninterruptable Power Supply, Special or Uninterruptable Power Supply, Ground Mounted.

## **REBUILD EXISTING HANDHOLE**

Effective: January 1, 2002

Revised: July 1, 2015

895.04TS

This item shall consist of rebuilding and bringing to grade a handhole at a location shown on the plans or as directed by the Engineer. The work shall consist of removing the handhole frame and cover and the walls of the handhole to a depth of eight (8) inches below the finished grade.

Upon completion of the above work, four (4) holes, four (4) inches in depth and one half (1/2) inch in diameter, shall be drilled into the remaining concrete; one hole centered on each of the four handhole walls. Four (4) #3 steel dowels, eight (8) inches in length, shall be furnished and shall be installed in the drilled holes with a masonry epoxy.

All concrete debris shall be disposed of outside the right-of-way.

The area adjacent to each side of the handhole shall be excavated to allow forming. All steel hooks, handhole frame, cover, and concrete shall be provided to construct a rebuilt handhole according to applicable portions of Section 814 of the Standard Specification and as modified in 814.01TS HANDHOLES Special Provision. The existing frame and cover shall be replaced if it was damaged during removal or as determined by the Engineer.

### Basis of Payment.

This work shall be paid for at the contract unit price each for REBUILD EXISTING HANDHOLE, which price shall be payment in full for all labor, materials, and equipment necessary to complete the work described above and as indicated on the drawings.



**REBUILD EXISTING HANDHOLE TO HEAVY-DUTY HANDHOLE**

Effective: January 1, 2002

Revised: July 1, 2015

895.05TS

This item shall consist of partial removal of an existing concrete traffic signal handhole, reconstruction to the specifications of heavy duty handhole including new frame and cover, and bringing it to grade at location(s) shown in the plans or as directed by the Engineer. This work shall consist of removing the existing handhole frame and cover and the walls of the handhole to a depth of fifteen (15) inches below the finished grade.

Upon completion of the above work, four (4) holes, four (4) inches in depth, and one-half (1/2) inch in diameter shall be drilled into the top of the remaining concrete; one hole centered into each of the four handhole walls. Four (4) #3 steel dowels eight inches in length, shall be furnished and installed in the drilled holes with a masonry epoxy.

All concrete debris shall be disposed of outside the right-of-way.

Any pavement or asphalt surface removal required to install the new concrete shall have straight and neat edges using a method approved by the Engineer. Care shall be taken to protect the existing traffic signal cable. Any cable damage shall be reported immediately and repaired as directed by the Area Traffic Signal Engineer.

All steel hooks, handhole frame, cover, and concrete shall be provided to construct a rebuilt heavy duty handhole according to applicable portions of Section 814 of the Standard Specification and as modified in 814.01TS HANDHOLES Special Provision.

Basis of Payment.

This work shall be paid for at the contract unit price each for REBUILD EXISTING HANDHOLE TO HEAVY-DUTY HANDHOLE.

**RELOCATE EXISTING PEDESTRIAN PUSH-BUTTON**

Effective: August 4, 2017

895.06TS

Relocation.

Revise the last paragraph of Article 895.02 of the Standard Specifications to read:

When relocating an existing pedestrian push-button, the related sign shall be removed and installed at the new location. The push-button shall be installed according to Article 888.03. Mounting / extension brackets shall be used to assure that the push button is accessible from a paved or concrete surface and is in full compliance with ADA. Mounting / extension brackets shall not be paid for separately but shall be included in the cost of the RELOCATE EXISTING PEDESTRIAN PUSH-BUTTON pay item.

## **IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION (TPG)**

Effective: August 1, 2012

Revised: February 1, 2014

In addition to the Contractor's equal employment opportunity affirmative action efforts undertaken as elsewhere required by this Contract, the Contractor is encouraged to participate in the incentive program to provide additional on-the-job training to certified graduates of IDOT funded pre-apprenticeship training programs outlined by this Special Provision.

It is the policy of IDOT to fund IDOT pre-apprenticeship training programs throughout Illinois to provide training and skill-improvement opportunities to assure the increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The intent of this IDOT Training Program Graduate (TPG) Special Provision is to place certified graduates of these IDOT funded pre-apprentice training programs on IDOT project sites when feasible, and provide the graduates with meaningful on-the-job training intended to lead to journey-level employment. IDOT and its sub-recipients, in carrying out the responsibilities of a state contract, shall determine which construction contracts shall include "Training Program Graduate Special Provisions." To benefit from the incentives to encourage the participation in the additional on-the-job training under this Training Program Graduate Special Provision, the Contractor shall make every reasonable effort to employ certified graduates of IDOT funded Pre-apprenticeship Training Programs to the extent such persons are available within a reasonable recruitment area.

Participation pursuant to IDOT's requirements by the Contractor or subcontractor in this Training Program Graduate (TPG) Special Provision entitles the Contractor or subcontractor to be reimbursed at \$15.00 per hour for training given a certified TPG on this contract. As approved by the Department, reimbursement will be made for training persons as specified herein. This reimbursement will be made even though the Contractor or subcontractor may receive additional training program funds from other sources for other trainees, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving other reimbursement. For purposes of this Special Provision the Contractor is not relieved of requirements under applicable federal law, the Illinois Prevailing Wage Act, and is not eligible for other training fund reimbursements in addition to the Training Program Graduate (TPG) Special Provision reimbursement.

No payment shall be made to the Contractor if the Contractor or subcontractor fails to provide the required training. It is normally expected that a TPG will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project through completion of the contract, so long as training opportunities exist in his work classification or until he has completed his training program. Should the TPG's employment end in advance of the completion of the contract, the Contractor shall promptly notify the designated IDOT staff member under this Special Provision that the TPG's involvement in the contract has ended and supply a written report of the reason for the end of the involvement, the hours completed by the TPG under 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 TPG.

The Contractor will provide for the maintenance of records and furnish periodic reports documenting its performance under this Special Provision.

**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 certified TRAINEES TRAINING PROGRAM GRADUATE. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

The Contractor shall provide training opportunities aimed at developing full journeyworker in the type of trade or job classification involved. The initial number of TPGs for which the incentive is available under this contract is 1. During the course of performance of the Contract the Contractor may seek approval from the Department for additional incentive eligible TPGs. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the TPGs 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 insure that this Training Program Graduate Special Provision is made applicable to such subcontract if the TPGs are to be trained by a subcontractor and that the incentive payment is passed on to each subcontractor.

For the Contractor to meet the obligations for participation in this TPG incentive program under this Special Provision, the Department has contracted with several entities to provide screening, tutoring and pre-training to individuals interested in working in the applicable construction classification and has certified those students who have successfully completed the program and are eligible to be TPGs. A designated IDOT staff member, the Director of the Office of Business and Workforce Diversity (OBWD), will be responsible for providing assistance and referrals to the Contractor for the applicable TPGs. For this contract, the Director of OBWD is designated as the responsible IDOT staff member to provide the assistance and referral services related to the placement for this Special Provision. For purposes of this Contract, contacting the Director of OBWD and interviewing each candidate he/she recommends constitutes reasonable recruitment.

Prior to commencing construction, the Contractor shall submit to the Department for approval the TPGs to be trained in each selected classification. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. No employee shall be employed as a TPG in any classification in which he/she has successfully completed a training course leading to journeyman status or in which he/she has been employed as a journeyman. Notwithstanding the on-the-job training purpose of this TPG Special Provision, some offsite training is permissible as long as the offsite training is an integral part of the work of the contract and does not comprise a significant part of the overall training.

Training and upgrading of TPGs of IDOT pre-apprentice training programs is intended to move said TPGs toward journeyman status and is the primary objective of this Training Program Graduate Special Provision. Accordingly, the Contractor shall make every effort to enroll TPGs by recruitment through the IDOT funded TPG programs to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance and entitled to the Training Program Graduate Special Provision \$15.00 an hour incentive.

The Contractor or subcontractor shall provide each TPG with a certificate showing the type and length of training satisfactorily completed.

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

SPECIAL PROVISION  
FOR  
INSURANCE

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

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

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

Village of Schaumburg

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Metropolitan Water Reclamation District of Greater Chicago

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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.



Route FAU 1103	Marked Route State and National Parkway	Section 15-00119-00-PV
Project Number C5MK(334)	County Cook	Contract Number 61F00

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issues 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.

Print Name Kristin Mehl, P.E.	Title Engineering Division Manager	Agency Village of Schaumburg
Signature 		Date 2/20/18

I. Site Description

A. Provide a description of the project location (include latitude and longitude):

This project is located along State and National Parkway from Plum Grove Road to IL Route 58 (Golf Road) in the Village of Schaumburg, Cook County, Illinois. Geographically, the project area is in Section 11, Township 41 N, Range 10 E. The GPS coordinates of the center of the project area are 42.00518 N and 88.05281E.

B. Provide a description of the construction activity which is subject of this plan:

This project includes earth excavation, pavement removal, construction of storm sewers, HMA binder and surface course, combination concrete curb and gutter, street lighting, storm sewer, tree removal, landscaping, erosion control, pavement marking, sodding, and all incidental and collateral work necessary to complete the project as shown on the plans.

C. Provide the estimated duration of this project:

10 months

D. The total area of the construction site is estimated to be 12.2 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 12.2 acres.

E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

0.66

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

330A - Peotone silty clay loam, 0 to 2 percent slopes, T factor = 5  
805B - Orthents, clayey, undulating, T factor = 2  
903A - Muskego and Houghton mucks, 0 to 2 percent slopes, T factor = 1

G. Provide an aerial extent of wetland acreage at the site:



0.26 acre

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

The side slopes of the drainage ditch in the median are steep and have the potential to erode.

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 scopes, etc.):

Stage 1 - Removal and replacement of curb and gutter, pavement, driveway, sidewalk, and storm sewer system on the eastbound/southbound side of the road.

Stage 2 - Removal and replacement of curb and gutter, pavement, driveway, sidewalk, and storm sewer system on the westbound/northbound side of the road.

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 off site 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:

Village of Schaumburg

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

Village of Schaumburg

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:

The project is tributary to Salt Creek West Branch.

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.

All vegetation outside of the construction limits will be undisturbed. Lake Dinkel, north of the project, will remain undisturbed.

O. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:

- Floodplain
- Wetland Riparian
- Threatened and Endangered Species
- Historic Preservation
- 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
- Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity, or siltation
- Applicable Federal, Tribal, State or Local Programs
- Other

1. 303(d) Listed receiving waters (fill out this section if checked above):

a. The name(s) of the listed water body, and identification of all pollutants causing impairment:

b. 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:

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

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

2. TMDL (fill out this section if checked above)

a. The name(s) of the listed water body:

b. 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:

c. 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 the allocation:

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

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Soil Sediment             | <input checked="" type="checkbox"/> Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids) |
| <input checked="" type="checkbox"/> Concrete                  | <input checked="" type="checkbox"/> Antifreeze / Coolants  |
| <input checked="" type="checkbox"/> Concrete Truck waste      | <input checked="" type="checkbox"/> Waste water from cleaning construction equipment               |
| <input checked="" type="checkbox"/> Concrete Curing Compounds | <input type="checkbox"/> Other (specify) _____   |
| <input checked="" type="checkbox"/> Solid waste Debris        | <input type="checkbox"/> Other (specify) _____   |
| <input checked="" type="checkbox"/> Paints                    | <input type="checkbox"/> Other (specify) _____   |
| <input checked="" type="checkbox"/> Solvents                  | <input type="checkbox"/> Other (specify) _____   |
| <input checked="" type="checkbox"/> Fertilizers / Pesticides  | <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 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 type="checkbox"/> Preservation of Mature Vegetation            | <input checked="" type="checkbox"/> Erosion Control Blanket / Mulching |
| <input type="checkbox"/> Vegetated Buffer Strips                      | <input checked="" type="checkbox"/> Sodding                            |
| <input checked="" type="checkbox"/> Protection of Trees               | <input type="checkbox"/> Geotextiles                                   |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding | <input type="checkbox"/> Other (specify) _____                         |
| <input type="checkbox"/> Temporary Turf (Seeding, Class 7)            | <input type="checkbox"/> Other (specify) _____                         |
| <input type="checkbox"/> Temporary Mulching                           | <input type="checkbox"/> Other (specify) _____                         |
| <input checked="" type="checkbox"/> Permanent Seeding                 | <input type="checkbox"/> Other (specify) _____                         |

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

Protection of Trees - This shall consist of the item "Temporary Fence" placed around trees to remain in accordance with the plans and special provisions.

Temporary Erosion Control Seeding will be used throughout construction to stabilize areas of bare earth.

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

Permanent seeding, erosion control blanket, and sodding will be placed at the conclusion of the project to establish permanent vegetation.

- 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.

The following stabilization practices will be used for this project:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Perimeter Erosion Barrier    | <input type="checkbox"/> Rock Outlet Protection                                  |
| <input checked="" type="checkbox"/> Temporary Ditch Check        | <input checked="" type="checkbox"/> Riprap                                       |
| <input checked="" type="checkbox"/> Storm Drain Inlet Protection | <input type="checkbox"/> Gabions   |
| <input type="checkbox"/> Sediment Trap                           | <input type="checkbox"/> Slope Mattress  |
| <input type="checkbox"/> Temporary Pipe Slope Drain              | <input type="checkbox"/> Retaining Walls   |
| <input type="checkbox"/> Temporary Sediment Basin                | <input type="checkbox"/> Slope Walls   |
| <input type="checkbox"/> Temporary Stream Crossing               | <input type="checkbox"/> Concrete Revetment Mats                                 |
| <input type="checkbox"/> Stabilized Construction Exits           | <input type="checkbox"/> Level Spreaders   |
| <input checked="" type="checkbox"/> Turf Reinforcement Mats      | <input checked="" type="checkbox"/> Other (specify) Above Grade Inlet Protection |
| <input type="checkbox"/> Permanent Check Dams                    | <input type="checkbox"/> Other (specify) _____                                   |
| <input type="checkbox"/> Permanent Sediment Basin                | <input type="checkbox"/> Other (specify) _____                                   |
| <input type="checkbox"/> Aggregate Ditch                         | <input type="checkbox"/> Other (specify) _____                                   |
| <input type="checkbox"/> Paved Ditch                             | <input type="checkbox"/> Other (specify) _____                                   |

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

Perimeter Erosion Barrier - Barriers will be placed along the areas of the project that drain offsite.  
Temporary Ditch Check - Ditch checks will be placed in the median ditch to reduce flow velocity and trap sediment.  
Storm Drain Inlet Filter - Inlet filters will be placed on all open lid structures in paved areas to collect sediment during construction.  
Above Grade Inlet Protection - Above grade inlet filters will be placed on all open lid structures in landscaped areas to collect sediment during construction.

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

Turf Reinforcement Mat - Turf reinforcement mats will be installed at the locations shown in the plans to provide additional stability in areas of the median ditch where there is minimal cover over the existing storm sewer mainline.  
Riprap - Riprap will be placed at the outfall ends of storm sewers that discharge to the median ditch to reduce erosion.

**D. Treatment Chemicals**

Will polymer flocculents or treatment chemicals be utilized on this project:  Yes  No

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

**E. Permanent 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 on the basis of the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design & Environment 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:

The slopes of the pipes have been designed to reduce the velocity of the water as much as possible without causing siltation within the pipes. Riprap will be installed at storm sewer outfalls.

**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 Illinois Environmental Protection Agency'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:

All management practices, controls, and other provisions provided in this plan are in accordance with IDOT Standard Specifications for Road and Bridge Construction and the Illinois Urban Manual.

**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 construction entrances/exits)
  - 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 operations
  - Time frame for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
  - Permanent stabilization activities for each area of the project
2. 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:
  - 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 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 to the Contractor for the practices associated with this project. 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 Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

Inlet Filters and Above Grade Inlet Filters - Sediment will be removed on a regular basis and filter bags replaced if they become damaged.

Temporary Ditch Filters - Any ditch filters that fail or become sediment laden shall be repaired or replaced immediately.

Perimeter Erosion Barrier - Sediment shall be removed if the integrity of the fencing is in jeopardy and any fencing knocked down shall be repaired immediately.

#### IV. Inspections

Qualified personnel shall inspect disturbed areas of the construction site 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 e-mail 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

Additional Inspections Required:

#### 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.



Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Section II.G of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractors/subcontractor completing this form.

Route FAU 1103	Marked Route State and National Parkway	Section 15-00119-00-PV
Project Number C5MK(334)	County Cook	Contract Number 61F00

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

- Contractor
- Sub-Contractor

Print Name

Signature

Title

Date

Name of Firm

Telephone

Street Address

City/State/Zip

Items which the Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP:



# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

## Division of Water Pollution Control Notice of Intent (NOI) for General Permit to Discharge Storm Water Associated with Construction Site Activities

*This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Permit Section at the above address.*

For Office Use Only

### OWNER INFORMATION

Permit No. ILR10 \_\_\_\_\_

Company/Owner Name: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_ Phone: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_ Zip: \_\_\_\_\_ Fax: \_\_\_\_\_  
Contact Person: \_\_\_\_\_ E-mail: \_\_\_\_\_  
Owner Type (select one) \_\_\_\_\_

MS4 Community:  Yes  No

### CONTRACTOR INFORMATION

Contractor Name: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_ Phone: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_ Zip: \_\_\_\_\_ Fax: \_\_\_\_\_

### CONSTRUCTION SITE INFORMATION

Select One:  New  Change of information for: ILR10 \_\_\_\_\_  
Project Name: \_\_\_\_\_ County: \_\_\_\_\_  
Street Address: \_\_\_\_\_ City: \_\_\_\_\_ IL Zip: \_\_\_\_\_  
Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
(Deg) (Min) (Sec) (Deg) (Min) (Sec) Section Township Range  
Approximate Construction Start Date \_\_\_\_\_ Approximate Construction End Date \_\_\_\_\_

Total size of construction site in acres: \_\_\_\_\_  
If less than 1 acre, is the site part of a larger common plan of development?  
 Yes  No

Fee Schedule for Construction Sites:  
Less than 5 acres - \$250  
5 or more acres - \$750

### STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Has the SWPPP been submitted to the Agency?  Yes  No  
(Submit SWPPP electronically to: [epa.constilr10swppp@illinois.gov](mailto:epa.constilr10swppp@illinois.gov))

Location of SWPPP for viewing: Address: \_\_\_\_\_ City: \_\_\_\_\_

SWPPP contact information: \_\_\_\_\_ Inspector qualifications: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

Project inspector, if different from above \_\_\_\_\_ Inspector qualifications: \_\_\_\_\_  
Inspector's Name: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

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) and may also prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.



**TYPE OF CONSTRUCTION (select one)**

Construction Type \_\_\_\_\_

SIC Code: \_\_\_\_\_

Type a detailed description of the project:

**HISTORIC PRESERVATION AND ENDANGERED SPECIES COMPLIANCE**

Has the project been submitted to the following state agencies to satisfy applicable requirements for compliance with Illinois law on:

Historic Preservation Agency       Yes       No

Endangered Species                       Yes       No

**RECEIVING WATER INFORMATION**

Does your storm water discharge directly to:     Waters of the State    or     Storm Sewer

Owner of storm sewer system: \_\_\_\_\_

Name of closest receiving water body to which you discharge: \_\_\_\_\_

Mail completed form to: Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Attn: Permit Section  
Post Office Box 19276  
Springfield, Illinois 62794-9276  
or call (217) 782-0610  
FAX: (217) 782-9891

Or submit electronically to: [epa.constilr10swppp@illinois.gov](mailto:epa.constilr10swppp@illinois.gov)

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this 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. In addition, I certify that the provisions of the permit, including the development and implementation of a storm water pollution prevention plan and a monitoring program plan, will be complied with.

***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))***

\_\_\_\_\_  
Owner Signature:

\_\_\_\_\_  
Date:

\_\_\_\_\_  
Printed Name:

\_\_\_\_\_  
Title:

## INSTRUCTIONS FOR COMPLETION OF CONSTRUCTION ACTIVITY NOTICE OF INTENT (NOI) FORM

Submit original, electronic or facsimile copies. Facsimile and/or electronic copies should be followed-up with submission of an original signature copy as soon as possible. Please write "copy" under the "For Office Use Only" box in the upper right hand corner of the first page.

***This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Permit Section at:***

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Permit Section  
Post Office Box 19276  
Springfield, Illinois 62794-9276  
or call (217) 782-0610

FAX: (217) 782-9891

Or submit electronically to: [epa.constilr10swppp@illinois.gov](mailto:epa.constilr10swppp@illinois.gov)

**Reports must be typed or printed legibly and signed.**

Any facility that is not presently covered by the General NPDES Permit for Storm Water Discharges From Construction Site Activities is considered a new facility.

If this is a change in your facility information, renewal, etc., please fill in your permit number on the appropriate line, changes of information or permit renewal notifications do not require a fee.

**NOTE: FACILITY LOCATION IS NOT NECESSARILY THE FACILITY MAILING ADDRESS, BUT SHOULD DESCRIBE WHERE THE FACILITY IS LOCATED.**

Use the formats given in the following examples for correct form completion.

	Example	Format
Section	12	1 or 2 numerical digits
Township	12N	1 or 2 numerical digits followed by "N" or "S"
Range	12W	1 or 2 numerical digits followed by "E" or "W"

For the Name of Closest Receiving Waters, do not use terms such as ditch or channel. For unnamed tributaries, use terms which include at least a named main tributary such as "Unnamed Tributary to Sugar Creek to Sangamon River."

Submission of initial fee and an electronic submission of Storm Water Pollution Prevention Plan (SWPPP) for Initial Permit prior to the Notice of Intent being considered complete for coverage by the ILR10 General Permits. Please make checks payable to: Illinois EPA at the above address.

Construction sites with less than 5 acres of land disturbance - fee is \$250.

Construction sites with 5 or more acres of land disturbance - fee is \$750.

SWPPP should be submitted electronically to: [epa.constilr10swppp@illinois.gov](mailto:epa.constilr10swppp@illinois.gov). When submitting electronically, use Project Name and City as indicated on NOI form.





# Illinois Environmental Protection Agency

Bureau of Water • 1021 N. Grand Avenue E. • P.O. Box 19276 • Springfield • Illinois • 62794-9276

## Division of Water Pollution Control

### Construction Site Storm Water Discharge Incidence of Non-Compliance (ION)

*This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Compliance Assurance Section at the above address. You may email this completed form to: [epa.swnoncomp@illinois.gov](mailto:epa.swnoncomp@illinois.gov)*

For Office Use Only
Permit No. ILR10_____

#### Permittee Information:

Name: \_\_\_\_\_

Street Address: \_\_\_\_\_ P.O. Box: \_\_\_\_\_

City: \_\_\_\_\_ State: IL Zip Code: \_\_\_\_\_ County: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

#### Construction Site Information:

Site Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ State: IL Zip Code: \_\_\_\_\_

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

(Deg) (Min) (Sec) (Deg) (Min) (Sec) Section Township Range

#### Cause of Non-Compliance

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#### Actions Taken to Prevent Any Further Non-Compliance

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#### Environmental Impact Resulting From the Non-Compliance

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#### Actions Taken to Reduce the Environmental Impact Resulting From the Non-Compliance

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***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))***

\_\_\_\_\_  
Owner Signature:

\_\_\_\_\_  
Date:

\_\_\_\_\_  
Printed Name:

\_\_\_\_\_  
Title:

DIVISION OF WATER POLLUTION CONTROL  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
FIELD OPERATIONS SECTION

**GUIDELINES FOR COMPLETION OF INCIDENCE OF NON-COMPLIANCE (ION) FORM**

**Complete and submit this form for any violation of the Storm Water Pollution Prevention Plan observed during any inspection conducted, including those not required by the SWPPP. Please adhere to the following guidelines:**

**Initial submission within 24 hours by email, telephone or fax (see region fax numbers) of any incidence of non-compliance for any violation. Submit email copy to: [epa.swnoncomp@illinois.gov](mailto:epa.swnoncomp@illinois.gov). After 24 hours notification, submit signed original ION within 5 days to the following address:**

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Compliance Assurance #19  
Post Office Box 19276  
Springfield, Illinois 62794-9276

**FIELD OPERATIONS HEADQUARTERS**  
Bruce Yurdin, Manager  
Phone: 217/782-3362 Fax: 217/785-1225  
EMAIL: [epa.swnoncomp@illinois.gov](mailto:epa.swnoncomp@illinois.gov)

**Region 1 - ROCKFORD**  
Chuck Corley, Manager  
Phone: 815/987-7760 Fax: 815/987-7005

**Region 2 - DESPLAINES**  
Jay Patel, Manager  
Phone: 847/294-4000 Fax: 847/294-4058

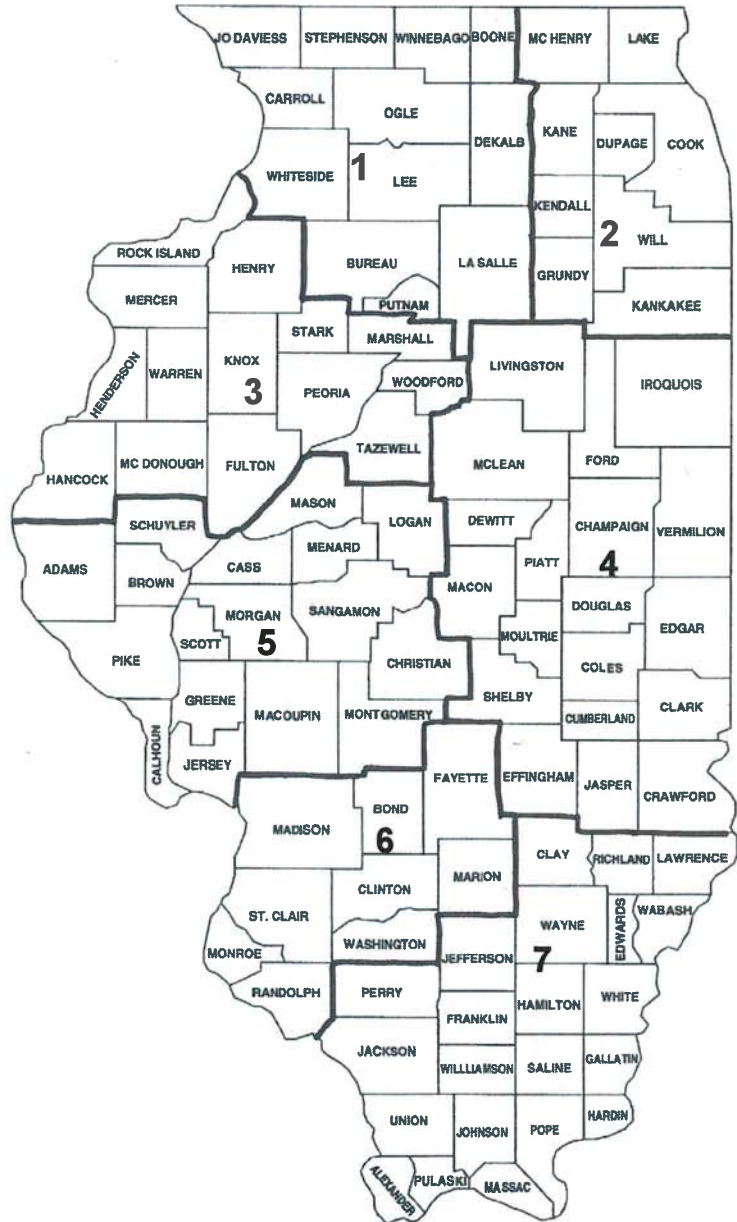
**Region 3 - PEORIA**  
Jim Kammueler, Manager  
Phone: 309/693-5463 Fax: 309/693-5467

**Region 4 - CHAMPAIGN**  
Joe Koronkowski, Manager  
Phone: 217/278-5800 Fax: 217/278-5808

**Region 5 - SPRINGFIELD**  
Bruce Yurdin, FOS Manager  
Phone: 217/782-3362 Fax: 217/785-1225

**Region 6 - COLLINSVILLE**  
Bruce Yurdin, FOS Manager  
Phone: 217/782-3362 Fax: 217/785-1225

**Region 7 - MARION**  
Byron Marks, Manager  
Phone: 618/993-7200 Fax: 618/997-5467





# 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 TERMINATION (NOT)

### of Coverage under the General Permit for Storm Water Discharges Associated with Construction Site Activities

*This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Permit Section at the above address.*

#### OWNER INFORMATION

Permit No. ILR10 \_\_\_\_\_

Owner Name: \_\_\_\_\_

Owner Type (select one) \_\_\_\_\_

Mailing Address: \_\_\_\_\_ Phone: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_ Zip: \_\_\_\_\_ Fax: \_\_\_\_\_

Contact Person: \_\_\_\_\_ E-mail: \_\_\_\_\_

#### CONTRACTOR INFORMATION

Contractor Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ Phone: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_ Zip: \_\_\_\_\_ Fax: \_\_\_\_\_

#### CONSTRUCTION SITE INFORMATION

Facility Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ IL Zip: \_\_\_\_\_ County: \_\_\_\_\_

NPDES Storm Water General Permit Number: ILR10 \_\_\_\_\_

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
(Deg) (Min) (Sec) (Deg) (Min) (Sec) Section Township Range

DATE PROJECT HAS BEEN COMPLETED AND STABILIZED: \_\_\_\_\_

**NOTE: Coverage under this permit cannot be terminated without the completion date.**

I certify under penalty of law that disturbed soils at the identified facility have been finally stabilized or that all storm water discharges associated with industrial activity from the identified facility that are authorized by an NPDES general permit have otherwise been eliminated. I understand that by submitting this notice of termination, that I am no longer authorized to discharge storm water associated with industrial activity by the general permit, and that discharging pollutants in storm water associated with industrial activity to Waters of the State is unlawful under the Environmental Protection Act and the Clean Water Act where the discharge is not authorized by an NPDES Permit.

**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))**

\_\_\_\_\_  
Owner Signature:

\_\_\_\_\_  
Date:

Mail completed form to: Illinois Environmental Protection Agency  
Division of Water Pollution Control, Attn: Permit Section  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276

(Do not submit additional documentation unless requested)

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) and may also prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

**GUIDELINES FOR COMPLETION OF NOTICE OF TERMINATION (NOT) FORM**

Please adhere to the following guidelines:

Submit original, electronic or facsimile copies. Facsimile and/or electronic copies should be followed-up with submission of an original signature copy as soon as possible.

Submit completed forms to:

Illinois Environmental Protection Agency  
 Division of Water Pollution Control, Attn: Permit Section  
 1021 North Grand Avenue East  
 P.O. Box 19276  
 Springfield, Illinois 62794-9276  
 or call (217) 782-0610  
 FAX: (217) 782-9891

Or submit electronically to: [epa.constilr10swppp@illinois.gov](mailto:epa.constilr10swppp@illinois.gov)

**Reports must be typed or printed legibly and signed.**

**NOTE: FACILITY LOCATION IS NOT NECESSARILY THE FACILITY MAILING ADDRESS, BUT SHOULD DESCRIBE WHERE THE FACILITY IS LOCATED.**

Use the formats given in the following examples for correct form completion.

	Example	Format
Section	12	1 or 2 numerical digits
Township	12N	1 or 2 numerical digits followed by "N" or "S"
Range	12W	1 or 2 numerical digits followed by "E" or "W"

Final stabilization has occurred when:

- (a) all soil disturbing activities at the site have been completed;
- (b) a uniform perennial vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas not covered by permanent structures; or
- (c) equivalent permanent stabilization measures have been employed.



REPLY TO  
ATTENTION OF:

**DEPARTMENT OF THE ARMY**  
CHICAGO DISTRICT, CORPS OF ENGINEERS  
231 SOUTH LA SALLE STREET  
CHICAGO, ILLINOIS 60604-1437

April 6, 2018

Technical Services Division  
Regulatory Branch  
LRC-2015-00490

SUBJECT: Authorization for the State and National Parkway Roadway Improvements in Schaumburg, Cook County, Illinois (Latitude 42.056086, Longitude -88.0598)

Kristin Mehl  
Village of Schaumburg  
714 South Plum Grove Road  
Schaumburg, Illinois 60193

Dear Ms. Mehl:

This office has verified that your proposed activity complies with the terms and conditions of Regional Permit 3 (Transportation Projects) and the General Conditions for all activities authorized under the Regional Permit Program.

This verification expires three (3) years from the date of this letter and covers only your activity as described in your notification and as shown on the plans entitled "FAU Route 1103 (State and National Parkway) – Plum Grove Road (FAU 2582) to Illinois Route 58 (Golf Road) (FAP 0559) – Reconstruction, Drainage, Lighting – Section 15-00119-00-PV – Project M-4003(686) – Village of Schaumburg – Cook County – C-91-220-16" dated November 28, 2017, prepared by Civiltech. Caution must be taken to prevent construction materials and activities from impacting waters of the United States beyond the scope of this authorization. If you anticipate changing the design or location of the activity, you should contact this office to determine the need for further authorization.

The activity may be completed without further authorization from this office provided the activity is conducted in compliance with the terms and conditions of the RPP, including conditions of water quality certification issued under Section 401 of the Clean Water Act by the Illinois Environmental Protection Agency (IEPA). If the design, location, or purpose of the project is changed, you should contact this office to determine the need for further authorization.

The following special conditions are a requirement of your authorization:

1. This authorization is contingent upon implementing and maintaining soil erosion and sediment controls in a serviceable condition throughout the duration of the project. You shall comply with the North Cook County 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.

- a. 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.
  - b. 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.
  - c. Prior to commencement of any in-stream work, you shall submit construction 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.
2. Please note that this site is within the aboriginal homelands of several American Indian Tribes. If any cultural, archaeological or historical resources are unearthed during activities authorized by this permit, work in that area must be stopped immediately and the Corps, State Historic Preservation Office and/or Tribal Historic Preservation Office must be contacted for further instruction. The Corps will initiate the coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing on the National Register of Historic Places.
  3. You are responsible for all work authorized herein and for ensuring that all contractors are aware of the terms and conditions of this authorization.
  4. A copy of this authorization must be present at the project site during all phases of construction.
  5. You shall notify this office of any proposed modifications to the project, including revisions to any of the plans or documents cited in this authorization. You must receive approval from this office before work affected by the proposed modification is performed.
  6. You shall notify this office prior to the transfer of this authorization and liabilities associated with compliance with its terms and conditions.
  7. Work in the waterway should be timed to take place during low or no-flow conditions. Low flow conditions are flow at or below the normal water elevation.
  8. The plan will be designed to allow for the conveyance of the 2-year peak flow past the work area without overtopping the cofferdam. The Corps has the discretion to reduce this requirement if documented by the applicant to be infeasible or unnecessary.



9. Water shall be isolated from the in-stream work area using a cofferdam constructed of non-erodible materials (steel sheets, aqua barriers, rip rap and geotextile liner, etc.). Earthen cofferdams are not permissible.
10. The cofferdam must be constructed from the upland area and no equipment may enter flowing water at any time. If the installation of the cofferdam cannot be completed from shore and access is needed to reach the area to be coffered, other measures, such as the construction of a causeway, will be necessary to ensure that equipment does not enter the water. Once the cofferdam is in place and the isolated area is dewatered, equipment may enter the coffered area to perform the required work.
11. If bypass pumping is necessary, the intake hose shall be placed on a stable surface or floated to prevent sediment from entering the hose. The bypass discharge shall be placed on a non-erodible, energy dissipating surface prior to rejoining the stream flow and shall not cause erosion. Filtering of bypass water is not necessary unless the bypass water has become sediment-laden as a result of the current construction activities.
12. During dewatering of the coffered work area, all sediment-laden water must be filtered to remove sediment. Possible options for sediment removal include baffle systems, anionic polymers systems, dewatering bags, or other appropriate methods. Water shall have sediment removed prior to being re-introduced to the downstream waterway. A stabilized conveyance from the dewatering device to the waterway must be identified in the plan. Discharge water is considered clean if it does not result in a visually identifiable degradation of water clarity.
13. The portion of the side slope that is above the observed water elevation shall be stabilized as specified in the plans prior to accepting flows. The substrate and toe of slope that has been disturbed due to construction activities shall be restored to proposed or pre-construction conditions and fully stabilized prior to accepting flows.

This verification does not obviate the need to obtain all other required Federal, state, or local approvals before starting work. Please note that Section 401 Water Quality Certification has been issued by IEPA for this RP. If you have any questions regarding Section 401 certification, please contact Mr. Darin LeCrone at IEPA Division of Water Pollution Control, Permit Section #15, by telephone at (217) 782-0610.

Once you have completed the authorized activity, please sign and return the enclosed compliance certification. If you have any questions, please contact Mr. Soren Hall of my staff by telephone at (312) 846-5532, or email at Soren.G.Hall@usace.army.mil.

Sincerely,

**CHERNICH.**  
**KATHLEEN.**  
**G.12303656**  
**16**  
Kathleen G. Chernich  
Chief, East Section  
Regulatory Branch

Digitally signed by  
CHERNICH.KATHLEEN.G.1230  
365616  
DN: c=US, o=U.S.  
Government, ou=DoD,  
ou=PKI, ou=USA,  
cn=CHERNICH.KATHLEEN.G.1  
230365616  
Date: 2018.04.06 13:56:55  
-05'00'

Enclosures

Copy Furnished:

North Cook SWCD (Rick McAndless)  
Huff & Huff (Kevin Walsh)





**PERMIT COMPLIANCE  
CERTIFICATION**

Permit Number: LRC-2015-00490  
Permittee: Kristin Mehl  
Village of Schaumburg  
Date: April 6, 2018

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of said permit and if applicable, compensatory wetland mitigation was completed in accordance with the approved mitigation plan.<sup>1</sup>

\_\_\_\_\_  
PERMITTEE

\_\_\_\_\_  
DATE

Upon completion of the activity authorized by this permit and any mitigation required by the permit, this certification must be signed and returned to the following address:

U.S. Army Corps of Engineers  
Chicago District, Regulatory Branch  
231 South LaSalle Street, Suite 1500  
Chicago, Illinois 60604-1437

Please note that your permitted activity is subject to compliance inspections by Corps of Engineers representatives. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.

---

<sup>1</sup> If compensatory mitigation was required as part of your authorization, you are certifying that the mitigation area has been graded and planted in accordance with the approved plan. You are acknowledging that the maintenance and monitoring period will begin after a site inspection by a Corps of Engineers representative or after thirty days of the Corps' receipt of this certification. You agree to comply with all permit terms and conditions, including additional reporting requirements, for the duration of the maintenance and monitoring period.



US Army Corps of Engineers®  
Chicago District

**GENERAL CONDITIONS  
APPLICABLE TO THE 2017  
REGIONAL PERMIT PROGRAM**

The permittee must comply with the terms and conditions of the Regional Permits and the following general conditions for all activities authorized under the RPP:

1. State 401 Water Quality Certification - Water quality certification under Section 401 of the Clean Water Act may be required from the Illinois Environmental Protection Agency (IEPA). The District may consider water quality, among other factors, in determining whether to exercise discretionary authority and require an Individual Permit. Please note that Section 401 Water Quality Certification is a requirement for projects carried out in accordance with Section 404 of the Clean Water Act. Projects carried out in accordance with Section 10 of the Rivers and Harbors Act of 1899 do not require Section 401 Water Quality Certification

On February 16, 2017, the IEPA granted Section 401 certification, with conditions, for all Regional Permits, except for activities in certain waterways noted under RPs 4 and 8. The following conditions of the certification are hereby made conditions of the RPP:

1. The applicant must not cause:
  - a) a violation of applicable water quality standards of the Illinois Pollution Control Board Title 35, Subtitle C: Water Pollution Rules and Regulations;
  - b) water pollution defined and prohibited by the Illinois Environmental Protection Act;
  - c) interference with water use practices near public recreation areas or water supply intakes;
  - d) a violation of applicable provisions of the Illinois Environmental Protection Act.
2. The applicant must provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.
3. Except as allowed under condition 7, 9 and 10, any spoil material excavated, dredged or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all state statutes, regulations and permit requirements with no discharge to waters of the State unless a permit has been issued by the Illinois EPA. Any backfilling must be done with clean material and placed in a manner to prevent violation of applicable water quality standards.
4. All areas affected by construction must be mulched and seeded as soon after construction as possible. The applicant shall undertake necessary measures and procedures to reduce erosion during construction. Interim measures to prevent erosion during construction shall be taken and may include the installation of staked straw bales, sedimentation basins and temporary mulching. All construction within the waterway shall be constructed during zero or low flow conditions. The applicant shall be responsible for obtaining a NPDES Storm Water Permit prior to initiating construction if the construction activity associated with the project will result in the disturbance of (1) one or more acres, total land area. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Illinois EPA's Division of Water Pollution Control, Permit Section.
5. The applicant shall implement erosion control measures consistent with the "Illinois Urban Manual" (IEPA/USDA, NRCS; 2016).
6. The applicant is advised that the following permits(s) must be obtained from the Illinois EPA: The applicant must obtain permits to construct sanitary sewers, water mains and related facilities prior to construction.
7. Backfill used in stream crossing trenches shall be predominantly sand or larger size material, with less than 20% passing a #230 U.S. sieve.
8. Any channel relocation shall be constructed under dry conditions and stabilized to prevent erosion prior to the diversion of flow.
9. Backfill used within trenches passing through surface waters of the State, except wetland areas, shall be clean course aggregate, gravel or other material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material may be used only if:
  - a) particle size analysis is conducted and demonstrates the material to be at least 80% sand or larger size material, using #230 U.S. sieve; or

- b) excavation and backfilling are done under dry conditions.
10. Backfill used within trenches passing through wetland areas shall consist of clean material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material shall be used to the extent practicable, with the upper six (6) to twelve (12) inches backfilled with the topsoil obtained during trench excavation.
  11. Any applicant proposing activities in a mined area or previously mined area shall provide to the IEPA a written determination regarding the sediment and materials used which are considered “acid-producing material” as defined in 35 Il. Adm. Code, Subtitle D. If considered “acid-producing material,” the applicant shall obtain a permit to construct pursuant to 35 Il. Adm. Code 404.101.
  12. Asphalt, bituminous material and concrete with protruding material such as reinforcing bar or mesh shall not be 1) used for backfill, 2) placed on shorelines/stream banks, or 3) placed in waters of the State.
  13. Applicants that use site dewatering techniques in order to perform work in waterways for construction activities approved under Regional Permits 1 (Residential, Commercial and Institutional Developments), 2 (Recreation Projects), 3 (Transportation Projects), 7 (Temporary Construction Activities), 9 (Maintenance), or 12 (Bridge Scour Protection) shall maintain flow in the stream during such construction activity by utilizing dam and pumping, fluming, culverts or other such techniques.
  14. In addition to any action required of the Regional Permit 13 (Cleanup of Toxic and Hazardous Materials Projects) with respect to the “Notification” General Condition 23, the applicant shall notify the Illinois EPA Bureau of Water, of the specific activity. This notification must include information concerning the orders and approvals that have been or will be obtained from the Illinois EPA Bureau of Land (BOL) for all cleanup activities under BOL jurisdiction, or for which authorization or approval is sought from BOL for no further remediation. This Regional Permit is not valid for activities that do not require or will not receive authorization or approval from the BOL.
  15. The applicant shall implement Best Management Practices (BMPs) to protect water quality, preserve natural hydrology and minimize the overall impacts to aquatic resources during and after construction. If the project involves a water with an approved Total Maximum Daily Load (TMDL) allocation for any parameter, measures which ensure consistency with the assumption and requirements of the TMDL shall be included. TMDL program information and water listings are available at <http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/index>. If the project involves and impaired water listed on the Illinois Environmental Protection Agency’s Section 303(d) list for suspended solids, turbidity, or siltation, measures designed for at least a 25-year, 24-hour rainfall event shall be incorporated. Impaired waters are identified at <http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/303d-list/index>.
  16. Earthen granular fill used for construction of temporary structures in waters of the State shall have less than 20% passing a #230 U.S. sieve.
  17. The use of directional drilling to install utility pipelines below surface waters of the State is hereby certified provided that:
    - a) All pits and other construction necessary for the directional drilling process are located outside of surface waters of the State;
    - b) All drilling fluids shall be adequately contained such that they cannot cause a discharge to surface waters of the State. Such fluids shall be managed such that they are not discharged to waters of the State and disposed of appropriately in accordance with the regulations at 35 Il. Adm. Code Subtitle G.
    - c) Erosion and sediment control is provided with Conditions 2, 4, and 5.
2. Illinois Coastal Management Program - Any non-federal entity applying to the Corps for an Individual Permit or a Letter of Permission for a project located within the boundary of the Illinois Coastal Management Program (ICMP), including waters of Lake Michigan, is required to submit a Federal Consistency Determination confirmation from the Illinois Coastal Management Program as part of the permit review process.

On February 18, 2017, the Illinois Department of Natural Resources, Coastal Management Program granted the Federal Consistent Determination for the Regional Permit Program. This determination is confirmation that the activities covered under the Regional Permit Program are consistent with the policies of the ICMP.

PDF maps of the Illinois Coastal Management Program’s Zone Boundaries can be found at the bottom of the page at [www.dnr.illinois.gov/cmp/Pages/boundaries.aspx](http://www.dnr.illinois.gov/cmp/Pages/boundaries.aspx) and instructions on requesting an ICMP Federal Consistency Determination can be found at [www.dnr.illinois.gov/cmp/Documents/ICMPFederalConsistencyReviewProcedures.pdf](http://www.dnr.illinois.gov/cmp/Documents/ICMPFederalConsistencyReviewProcedures.pdf).

### 3. Threatened and Endangered Species –

- a) For applications where a Federal agency other than the District is designated as the lead agency, the designated lead agency shall follow agency specific procedures for complying with the requirements of Section 7 of the Endangered Species Act of 1973 (Act). Federal permittees must provide the District with the following documentation to demonstrate compliance with those requirements: the species list, your effects determination for each species, and the rationale for your effects determination for each species.
- b) For non-Federal permittees, if the District determines that the activity may affect Federally listed species or critical habitat, the District must initiate section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) in accordance with the Endangered Species Act of 1973, as amended (Act). Applicants must provide additional information that would enable the District to conclude that the proposed action will have no effect on Federally listed species.

The application packet must indicate whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Act, may be present within areas affected (directly or indirectly) by the proposed project. Applicants must provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at [www.fws.gov/midwest/Endangered](http://www.fws.gov/midwest/Endangered). Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Review all documentation pertaining to the species list and provide your effects determination for each species along with the rationale for your effects determination for each species to this office for review.

If no species, their suitable habitats, or critical habitats are listed, then a “no effect” determination can be made, and section 7 consultation is not warranted. If species or critical habitat appear on the list or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have “no effect” or “may affect” the species or suitable habitat. The District must request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effect determinations in the biological assessment or biological evaluation.

If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.

Projects in Will, DuPage, or Cook Counties that are located in the recharge zones for Hine’s emerald dragonfly critical habitat units may be reviewed under the RPP, with careful consideration due to the potential impacts to the species. All projects reviewed that are located within 3.25 miles of a critical habitat unit will be reviewed under Category II of the RPP. Please visit the following website for the locations of the Hine’s emerald dragonfly critical habitat units in Illinois. [www.fws.gov/midwest/endangered/insects/hed/FRHinesFinalRevisedCH.html](http://www.fws.gov/midwest/endangered/insects/hed/FRHinesFinalRevisedCH.html)

4. Historic Properties - In cases where the District determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity may require an Individual Permit. A determination of whether the activity may be authorized under the RPP instead of an Individual Permit will not be made until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

Federal permittees designated as the lead agency shall follow agency specific procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the District with the appropriate documentation to demonstrate compliance with those requirements.

Non-Federal permittees must include notification to the District if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the permit application must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)).

When reviewing permit submittals, the District will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. Based on the information submitted and these efforts, the District will determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the District,

the non-Federal applicant must not begin the activity until notified by the District either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

The District must take into account the effects on such properties in accordance with 33 CFR Part 325, Appendix C, and 36 CFR 800. If all issues pertaining to historic properties have been resolved through the consultation process to the satisfaction of the District, Illinois Historic Preservation Agency (IHPA) and Advisory Council on Historic Preservation, the District may, at its discretion, authorize the activity under the RPP.

Applicants are encouraged to obtain information on historic properties from the IHPA and the National Register of Historic Places at the earliest stages of project planning. For information, contact:

Illinois Historic Preservation Agency  
1 Old State Capitol Plaza  
Springfield, IL 62701-1507  
(217) 782-4836  
[www.illinois.gov/ihpa/](http://www.illinois.gov/ihpa/)

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity, you must immediately notify this office of what you have found, and to the maximum extent practicable, stop activities that would adversely affect those remains and artifacts until the required coordination has been completed. The District will initiate the Federal, Tribal and State coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

5. Soil Erosion and Sediment Control - Measures must be taken to control soil erosion and sedimentation at the project site to ensure that sediment is not transported to waters of the U.S. during construction. Soil erosion and sediment control measures must be implemented before initiating any clearing, grading, excavating or filling activities. All temporary and permanent soil erosion and sediment control measures must be maintained throughout the construction period and until the site is stabilized. All exposed soil and other fills, and any work below the ordinary high water mark must be permanently stabilized at the earliest practicable date.

Applicants are required to prepare a soil erosion and sediment control (SESC) plan including temporary best management practices (BMPs) to be implemented during construction. It is recommended that the plan be designed in accordance with the Illinois Urban Manual, current edition ([www.aiswcd.org/illinois-urban-manual](http://www.aiswcd.org/illinois-urban-manual)). Practice standards and specifications for measures outlined in the soil erosion and sediment control plans should follow the latest edition of the "Illinois Urban Manual: A Technical Manual Designed for Urban Ecosystem Protection and Enhancement." Additional SESC measures not identified in the Illinois Urban Manual may also be utilized upon District approval.

At the District's discretion, an applicant may be required to submit the SESC plan to the local Soil and Water Conservation District (SWCD) or the Lake County Stormwater Management Commission (SMC) for review. When the District requires submission of an SESC plan, the following applies: An activity may not commence until the SESC plan for the project site has been approved; The SWCD/SMC will review the plan and provide a written evaluation of its adequacy; A SESC plan is considered acceptable when the SWCD/SMC has determined that it meets technical standards. Once a determination has been made, the authorized work may commence unless the SWCD/SMC has requested that they be notified prior to commencement of the approved plans. The SWCD/SMC may elect to attend pre-construction meetings with the permittee and conduct inspections during construction to determine compliance with the plans. Applicants are encouraged to begin coordinating with the appropriate SWCD/SMC office at the earliest stages of project planning. For information, contact:

Kane-DuPage SWCD  
2315 Dean Street, Suite 100  
St. Charles, IL 60174  
(630) 584-7960 ext.3  
[www.kanedupageswcd.org](http://www.kanedupageswcd.org)

Lake County SMC  
500 W. Winchester Rd, Suite 201  
Libertyville, IL 60048  
(847) 377-7700  
[www.lakecountyil.gov/stormwater](http://www.lakecountyil.gov/stormwater)

McHenry-Lake County SWCD  
1648 South Eastwood Dr.  
Woodstock, IL 60098  
(815) 338-0099 ext.3  
[www.mchenryswcd.org](http://www.mchenryswcd.org)

North Cook SWCD  
640 Cosman Rd  
Elk Grove Village, IL 60007  
(847) 885-8830  
[www.northcookswcd.org](http://www.northcookswcd.org)

Will/South Cook SWCD  
1201 S. Gougar Rd  
New Lenox, IL 60451  
(815) 462-3106  
[www.will-scookswcd.org](http://www.will-scookswcd.org)



6. Total Maximum Daily Load - For projects that include a discharge of pollutant(s) to waters for which there is an approved Total Maximum Daily Load (TMDL) allocation for any parameter, the applicant must develop plans and BMPs that are consistent with the assumptions and requirements in the approved TMDL. The applicant must incorporate into their plans and BMPs any conditions applicable to their discharges necessary for consistency with the assumptions and requirements of the TMDL within any timeframes established in the TMDL. The applicant must carefully document the justifications for all BMPs and plans, and install, implement and maintain practices and BMPs that are consistent with all relevant TMDL allocations and with all relevant conditions in an implementation plan. Information regarding the TMDL program, including approved TMDL allocations, can be found at the following website: [www.epa.state.il.us/water/tmdl/](http://www.epa.state.il.us/water/tmdl/)

7. Floodplain - Discharges of dredged or fill material into waters of the United States within the 100-year floodplain (as defined by the Federal Emergency Management Agency) resulting in permanent above-grade fills must be avoided and minimized to the maximum extent practicable. When such an above-grade fill would occur, the applicant may need to obtain approval from the Illinois Department of Natural Resources, Office of Water Resources, (IDNR-OWR) which regulates activities affecting the floodway and the local governing agency (e.g., Village or County) with jurisdiction over activities in the floodplain. Compensatory storage may be required for fill within the floodplain. Applicants are encouraged to obtain information from the IDNR-OWR and the local governing agency with jurisdiction at the earliest stages of project planning. For information on floodway construction, contact:

IDNR/OWR  
2050 Stearns Road  
Bartlett, IL 60103  
(847) 608-3100  
[www.dnr.illinois.gov/WaterResources/](http://www.dnr.illinois.gov/WaterResources/)

For information on floodplain construction, please contact the local government and/or the Federal Emergency Management Agency. Pursuant to 33 CFR 320.4(j), the District will consider the likelihood of the applicant obtaining approval for above-ground permanent fills in floodplains in determining whether to issue authorization under the RPP.

8. Navigation - Regulated activities may not cause more than a minimal adverse effect on navigation. Safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities within navigable waters of the United States. The permittee understands and agrees that if future operations by the United States require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work will cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim will be made against the United States on account of any such removal or alteration.

9. Proper Maintenance - Authorized structures or fill must be properly maintained, including that necessary to ensure public safety.

10. Aquatic Life Movements - Regulated activities may not substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including species that normally migrate through the area, unless the activity's primary purpose is to impound water.

11. Equipment - Soil disturbance and compaction in regulated areas must be minimized through the use of low ground pressure equipment, matting for heavy equipment, or other measures as approved by the District.

12. Wild and Scenic Rivers - Regulated activities may not occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status. Information on Wild and Scenic Rivers may be obtained from the appropriate land management agency in the area, such as the National Park Service and the U.S. Forest Service.

13. Tribal Rights - Regulated activities or their operation may not impair reserved Tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

14. Water Supply Intakes - Discharges of dredged or fill material may not occur in the proximity of a public water supply intake except where the discharge is for repair of the public water supply intake structures or adjacent bank stabilization.

15. Shellfish Production - Discharges of dredged or fill material may not occur in areas of concentrated shellfish production.

16. Suitable Material - Discharges of dredged or fill material may not consist of unsuitable material. Material discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act). Unsuitable material includes trash, debris, vehicle parts, asphalt, and creosote treated wood.
17. Spawning Areas - Discharges in spawning areas during spawning seasons must be avoided to the maximum extent practicable.
18. Obstruction of High Flows - Discharges must not permanently restrict or impede the passage of normal or expected high flows. All crossings must be culverted, bridged or otherwise designed to prevent the restriction of expected high water flows and designed so as not to impede low water flows or the movement of aquatic organisms.
19. Impacts From Impoundments - If the discharge creates an impoundment of water, adverse impacts on aquatic resources caused by the accelerated passage of water and/or the restriction of its flow must be avoided to the maximum extent practicable.
20. Waterfowl Breeding Areas - Discharges into breeding areas utilized by migratory waterfowl must be avoided to the maximum extent practicable.
21. Removal of Temporary Fills - Temporary fill material must be removed in its entirety and the affected area returned to pre-existing condition.
22. Mitigation - All appropriate and practicable steps must first be taken to avoid and minimize impacts to aquatic resources. For unavoidable impacts, compensatory mitigation is required to replace the loss of wetland, stream, and/or other aquatic resource functions (33 CFR 332). The proposed compensatory mitigation must utilize a watershed approach and fully consider the ecological needs of the watershed. Where an appropriate watershed plan is available, mitigation site selection should consider recommendations in the plan. The applicant must describe in detail how the mitigation site was chosen and will be developed, and be based on the specific resource need of the impacted watershed. Permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts. However, the District is responsible for determining the appropriate form and amount of compensatory mitigation required when evaluating compensatory mitigation options and determining the type of mitigation that would be environmentally preferable. In making this determination, the District will assess the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site, and their significance within the watershed. Methods of providing compensatory mitigation include aquatic resource restoration, establishment, enhancement, and in certain circumstances, preservation. Compensatory mitigation will be accomplished by establishing a minimum ratio of 1.5 acres of mitigation for every 1.0 acre of impact to waters of the U.S. Furthermore, the District has the discretion to require additional mitigation to ensure that the impacts are no more than minimal. Further information is available at [www.lrc.usace.army.mil/Missions/Regulatory/Illinois/Mitigation.aspx](http://www.lrc.usace.army.mil/Missions/Regulatory/Illinois/Mitigation.aspx).
23. Notification - The applicant must provide written notification (i.e., a complete application) for a proposed activity to be verified under the RPP prior to commencing a proposed activity. The District's receipt of the complete application is the date when the District receives all required notification information from the applicant (see below). If the District informs the applicant within 60 calendar days that the notification is incomplete (i.e., not a complete application), the applicant must submit to the District, in writing, the requested information to be considered for review under the Regional Permit Program. A new 60 day review period will commence when the District receives the requested information. Applications that involve unauthorized activities that are completed or partially completed by the applicant are not subject to the 60-day review period. Applications may be either sent to [ChicagoRequests@usace.army.mil](mailto:ChicagoRequests@usace.army.mil) or mailed to our office: USACE Regulatory Branch, 231 South LaSalle Street, Suite 1500, Chicago, Illinois 60604.

For all activities, notification must include:

- a. A detailed narrative of the proposed activity describing all work to be performed, a clear project purpose and need statement, the Regional Permit(s) to be used for the activity, the area (in acres) of permanent and temporary fills proposed in each water of the U.S., and a statement that the terms and conditions of the RPP will be followed. For projects with impacts to multiple aquatic resources, provide a table identifying impact types and amounts.
- b. A completed joint application form for Illinois signed by the applicant or agent. The application form is available at [www.lrc.usace.army.mil/Portals/36/docs/regulatory/forms/appform.pdf](http://www.lrc.usace.army.mil/Portals/36/docs/regulatory/forms/appform.pdf). If the applicant does not sign the joint application form, notification must include a signed, written statement from the applicant designating the agent as their representative.

- c. A delineation of waters of the U.S., including wetlands, for the project area, and for areas adjacent to the project site (off-site wetlands must be identified through the use of reference materials including review of local wetland inventories, soil surveys, and the most recent available aerial photography), must be prepared in accordance with the current U.S. Army Corps of Engineers methodology ([www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/reg\\_supp.aspx](http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/reg_supp.aspx)) and generally conducted during the growing season.\* The District's wetland delineation standards are available at [www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/Delineations.pdf](http://www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/Delineations.pdf). For sites supporting wetlands, the delineation must include a Floristic Quality Assessment (Swink and Wilhelm. 1994, latest edition, Plants of the Chicago Region). The delineation must also include information on the occurrence of any high-quality aquatic resources (see Appendix A), and a listing of waterfowl, reptile and amphibian species observed while at the project area. The District reserves the right to exercise judgment when reviewing submitted wetland delineations. Flexibility of these requirements may be allowed by the District on a case-by-case basis only.
- d. A street map showing the location of the project area.
- e. Latitude and longitude for the project in decimal degrees format (for example 41.878639N, -87.631212W).
- f. Preliminary engineering drawings sized 11" by 17" (full-sized may be requested by the project manager) showing all aspects of the proposed activity and the location of waters of the U.S. to be impacted and not impacted. The plans must include grading contours, proposed and existing structures such as buildings footprints, roadways, road crossings, stormwater management facilities, utilities, construction access areas and details of water conveyance structures. The plans must also depict buffer areas, outlots or open space designations, best management practices, deed restricted areas and restoration areas, if required under the specific RP.
- g. Submittal of soil erosion and sediment control (SESC) plans that identify all SESC measures to be utilized during construction of the project.
- h. A determination whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Endangered Species Act of 1973, as amended, may be present within areas affected (directly or indirectly) by the proposed project. Applicants must provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at [www.fws.gov/midwest/Endangered](http://www.fws.gov/midwest/Endangered). Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Review all documentation pertaining to the species list and provide your effects determination for each species along with the rationale for your effects determination for each species to this office for review.  
  
In the event there are no species, their suitable habitats, or critical habitats within areas affected (directly or indirectly) by the proposed project, then a "no effect" determination can be made and section 7 consultation is not warranted. If species or critical habitat appear on the list, or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have a "no effect" or a "may affect" determination on the species or suitable habitat. The District will request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effects determinations in the biological assessment or biological evaluation. If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.
- i. A determination of the presence or absence of any State threatened or endangered species. Please contact the Illinois Department of Natural Resources (IDNR) to determine if any State threatened and endangered species could be in the project area. You can access the IDNR's Ecological Compliance Assessment Tool (EcoCAT) at the following website: [dnr.illinois.gov/EcoPublic/](http://dnr.illinois.gov/EcoPublic/). For the first general information question, select "To obtain information on Illinois T&E species or INAI sites for federal agency actions" and select "U.S. Army Corps of Engineers" from the drop down menu. Once the EcoCAT and consultation process is complete, forward all resulting information to this office for consideration. The report must also include recommended methods as required by the IDNR for minimizing potential adverse effects of the project.

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\* If a wetland delineation is conducted outside of the growing season, the District will determine on a case-by-case basis whether sufficient evidence is available to make an accurate determination. If the District finds that the delineation lacks sufficient evidence, the application will not be considered complete until the information is provided. This may involve re-delineating the project site during the growing season.



- j. A statement about the knowledge of the presence or absence of historic properties, which includes properties listed, or properties eligible to be listed in the National Register of Historic Places. A letter from the Illinois Historic Preservation Agency (IHPA) may be obtained indicating whether your project is in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. The permittee must provide all pertinent correspondence with the IHPA documenting compliance. The IHPA has a checklist of documentation required for their review located here: [www.illinois.gov/iHPA/Preserve/Pages/Resource-Protection.aspx](http://www.illinois.gov/iHPA/Preserve/Pages/Resource-Protection.aspx).
- k. Where an appropriate watershed plan is available, the applicant must address in writing how the proposed activity is aligned with the relevant water quality, hydrologic, and aquatic resource protection recommendations in the watershed plan. A list of watershed plans is available at [www.lrc.usace.army.mil/Missions/Regulatory/Illinois/WatershedPlans.aspx](http://www.lrc.usace.army.mil/Missions/Regulatory/Illinois/WatershedPlans.aspx).
- l. A discussion of measures taken to avoid and/or minimize impacts to aquatic resources on the project site.
- m. A compensatory mitigation plan for all impacts to waters of the U.S. (if compensatory mitigation is required under the specific RP) in compliance with 33 CFR 332.
- n. A written narrative individually addressing each of the items listed under the specific RP(s) being requested.

For Category II activities, the District will provide an Agency Request for Comments (ARC) which describes the proposed activity. The ARC will be sent to interested Federal, state and local agencies, and appropriate Indian Tribes for review and comment. Additional entities may also be notified as needed. Agencies have ten (10) calendar days from the date of the ARC to contact the District and either provide comments or request an extension, not to exceed fifteen (15) calendar days. The Illinois Historic Preservation Agency and Indian Tribes have thirty (30) calendar days from the date of the ARC to provide comments. The District will fully consider agency comments received within the specified time frame. If the District determines that the activity complies with the terms and conditions of the RPP and impacts on aquatic resources are minimal, the District will notify the applicant in writing and include special conditions if deemed necessary. If the District determines the impacts of the proposed activity are more than minimal, the District will notify the applicant that the project does not qualify for authorization under the RPP and instruct the applicant on the procedures to seek authorization under an Individual Permit.

24. Compliance Certification - Any permittee who has received authorization under the RPP from the District must submit a signed certification stating that the authorized work has been completed. The certification will be forwarded by the District with the authorization letter and will include: a) a statement that the authorized work was done in accordance with the District's authorization, including any general or specific conditions; b) a statement that any required mitigation was completed in accordance with the permit conditions, and; c) the signature of the permittee certifying the completion of the work and mitigation.

25. Multiple use of Regional Permits - In any case where a Regional Permit is combined with any other Regional Permit to cover a single and complete project (except where prohibited under specific Regional Permits), the applicant must notify the District in accordance with General Condition 23. If multiple Regional Permits are used, the total impact may not exceed the maximum allowed by the Regional Permit with the greatest impact threshold.

26. Other Restrictions - Authorization under the RPP does not obviate the need to obtain other Federal, State or local permits, approvals, or authorizations required by law nor does it grant any property rights or exclusive privileges, authorize any injury to the property or rights of others or authorize interference with any existing or proposed Federal project.

Approved by:

//ORIGINAL SIGNED/

\_\_\_\_\_  
 Christopher T. Drew  
 Colonel, U.S. Army  
 District Commander

March 23, 2017

\_\_\_\_\_  
 Date

# North Cook County Soil & Water Conservation District

640 Cosman Road, Elk Grove Village, Illinois 60007  
Phone: 224-875-780, email: [r.mcandless@northcookswcd.org](mailto:r.mcandless@northcookswcd.org)

February 12, 2018

Mr. Tom Liliensiek, P.E..  
Civiltech Engineering, Inc.  
30 N. LaSalle Street  
Suite 2624  
Chicago, Il. 60602

Re: Conditional Approval-Soil Erosion & Sediment Control (SE/SC) Plan for the  
Proposed State/National Parkway Reconstruction, Schaumburg, LRC-2015-00490.

Dear Mr. Liliensiek,

I have completed my review of the Soil Erosion & Sediment Control (SE/SC) Plan for the proposed Proposed State/National Parkway Reconstruction, Schaumburg, LRC-2015-00490. Pending the submittal to this office for review and approval of the "means & methods" associated with an In-Stream Work Plan and Construction Site Dewatering Plan by the Contractor selected for this project, this letter is to be considered a **Conditional Approval** of the Soil Erosion & Sediment Control Plan for the project. A letter of **Final SE/SC Plan Approval** will be issued after I have completed my review of, and approved, the In-Stream Work and Dewatering Plans.

Regards,



Rick McAndless, CPESC

Cc: Soren Hall, Project Manager, U.S. Army Corps of Engineers



# Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271  
www.dnr.illinois.gov

Bruce Rauner, Governor  
Wayne A. Rosenthal, Director

**Office of Water Resources • 2050 West Stearns Road • Bartlett, Illinois 60103**

December 21, 2017

**SUBJECT: Permit No. NE2017060  
State and National Parkway Roadway Reconstruction  
West Branch of Salt Creek  
Cook County, Application No. N20170164**

Kristin Mehl, P.E.  
Village of Schaumburg  
Engineering and Public Works Dept.  
714 South Plum Grove Road  
Schaumburg, Illinois 60193

Dear Ms. Mehl:

Enclosed is Illinois Department of Natural Resources, Office of Water Resources Permit No. NE2017060 authorizing the subject project. This permit does not supersede any other federal, state or local authorizations that may be required for the project.

Please be advised that the Illinois Department of Natural Resources, Division of Ecosystems and Environment (DEE) participates in the regulatory programs of the U.S. Army, Corps of Engineers (USACE) and may review this project if a USACE Section 10 or 404 permit is required. Issuance of a permit by the Office of Water Resources does not preclude DEE's provision of comments and/or recommendations, primarily related to biological effects of the proposed action, to the USACE and other federal agencies concerning your project.

If any changes of the permitted work are found necessary, revised plans should be submitted promptly to this office for review and approval. Also, this permit expires on the date indicated in Condition (13). If unable to complete the work by that date, the permittee may make a written request for a time extension.

Please contact me at 847/608-3116 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary W. Jereb".

Gary W. Jereb, P.E., Chief  
Northeastern Illinois Regulatory Programs Section

GJ:cjp  
Enclosure

cc: Chicago District, U.S. Army Corps of Engineers  
Tom Liliensiek, CivilTech Engineering, Inc. ✓



PERMIT NO. NE2017060  
DATE: December 21, 2017

**State of Illinois**  
**Department of Natural Resources, Office of Water Resources**

Permission is hereby granted to:

Village of Schaumburg  
714 South Plum Grove Road  
Schaumburg, Illinois 60193

to excavate and regrade the channel and floodway of the West Branch of Salt Creek for the reconstruction of State and National Parkways in the Southeast Quarter of Section 11, Township 41 North, Range 10 East of the Third Principal Meridian in Cook County,

in accordance with an application dated November 15, 2017, and the plans and specifications entitled:

PLANS FOR PROPOSED FEDERAL AID HIGHWAY, FAU ROUTE 1103 (STATE AND NATIONAL PARKWAY), PLUM GROVE ROAD (FAU 2582) TO ILLINOIS ROUTE 58 (GOLF ROAD) (FAP 0559) RECONSTRUCTION, DRAINAGE, LIGHTING, VILLAGE OF SCHAUMBURG, TITLE SHEET, UNDATED, SHEETS 50, 52, 54, 56, 58, 60, 61 AND 143 TO 173 OF 185, DATED SEPTEMBER 22, 2017, RECEIVED NOVEMBER 20, 2017.

Examined and Recommended:

Gary W. Jereb, Chief  
Northeastern IL Regulatory  
Programs Section

Approval Recommended:

Daniel A. Injerd, Director  
Office of Water Resources

Approved:

Wayne A. Rosenthal, Director  
Department of Natural Resources

This PERMIT is subject to the terms and special conditions contained herein.

**THIS PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:**

- 1) This permit is granted in accordance with the Rivers, Lakes and Streams Act "615 ILCS 5."
- 2) This permit does not convey title to the permittee or recognize title of the permittee to any submerged or other lands, and furthermore, does not convey, lease or provide any right or rights of occupancy or use of the public or private property on which the activity or any part thereof will be located, or otherwise grant to the permittee any right or interest in or to the property, whether the property is owned or possessed by the State of Illinois or by any private or public party or parties.
- 3) This permit does not release the permittee from liability for damage to persons or property resulting from the work covered by this permit, and does not authorize any injury to private property or invasion of private rights.
- 4) This permit does not relieve the permittee of the responsibility to obtain other federal, state or local authorizations required for the construction of the permitted activity; and if the permittee is required by law to obtain approvals from any federal or state agency to do the work, this permit is not effective until the federal and state approvals are obtained. If construction does not begin within two years of the date of this permit, the permittee must submit the project to EcoCat (<http://dnr.illinois.gov/EcoPublic/>) for an updated consultation under the Illinois Endangered Species Protection Act and the Illinois Natural Areas Preservation Act
- 5) The permittee shall, at the permittee's own expense, remove all temporary piling, cofferdams, false work, and material incidental to the construction of the project. If the permittee fails to remove such structures or materials, the Department may have removal made at the expense of the permittee.
- 6) In public waters, if future need for public navigation or other public interest by the state or federal government necessitates changes in any part of the structure or structures, such changes shall be made by and at the expense of the permittee or the permittee's successors as required by the Department or other properly constituted agency, within sixty (60) days from receipt of written notice of the necessity from the Department or other agency, unless a longer period of time is specifically authorized.
- 7) The execution and details of the work authorized shall be subject to the review and approval of the Department. Department personnel shall have the right of access to accomplish this purpose.
- 8) Starting work on the activity authorized will be considered full acceptance by the permittee of the terms and conditions of the permit.
- 9) The Department in issuing this permit has relied upon the statements and representations made by the permittee; if any substantive statement or representation made by the permittee is found to be false, this permit will be revoked; and when revoked, all rights of the permittee under the permit are voided.
- 10) In public waters, the permittee and the permittee's successors shall make no claim whatsoever to any interest in any accretions caused by the activity.
- 11) In issuing this permit, the Department does not ensure the adequacy of the design or structural strength of the structure or improvement.
- 12) Noncompliance with the conditions of this permit will be considered grounds for revocation.
- 13) If the construction activity permitted is not completed on or before December 31, 2020 this permit shall cease and be null and void.



18-054

**WATERSHED MANAGEMENT PERMIT**  
**METROPOLITAN WATER RECLAMATION DISTRICT**  
**OF GREATER CHICAGO**  
111 EAST ERIE, CHICAGO, ILLINOIS, 60611

Watershed Management Permit No.

www.mwrdd.org

**INSTRUCTIONS FOR COMPLETING PERMIT FORM:** Submit two original signed copies of this permit application (nine pages) and any required WMO schedules listed below; do not leave any blank spaces; use "X" for checking applicable information. Also submit two copies of location map and plans. Address all correspondence to the Local Sewer Systems Section; for any inquiries or assistance, telephone (312) 751-3255.

**NAME AND LOCATION:**

Name of Project (as shown on plans): FAU Route 1103 (State and National Parkway)

Location of Project (street address or with respect to two major streets): State and National Parkway, from Plum Grove Road to IL Route 58 (Golf Road)

Municipality (Township, if unincorporated) Village of Schaumburg

Section <sup>11</sup> \_\_\_\_\_, Township <sup>41</sup> \_\_\_\_\_ N, Range <sup>10</sup> \_\_\_\_\_ E

PIN (include all PINs for project, use additional sheets if more than two): \_\_\_\_\_ ;

Check type of sewer area for project:  Combined Sewer Area  Separate Sewer Area

<input checked="" type="checkbox"/> Project Information (Required in all cases)	WMO Schedule A	(Page 5 of 9)
<input checked="" type="checkbox"/> Sewer Summary (Required in all cases)	WMO Schedule B	(Page 6 of 9)
<input checked="" type="checkbox"/> Sewer Connections (Required in all cases)	WMO Schedule C	(Page 7 of 9)
<input type="checkbox"/> Detention & Stormwater Management Facilities (WMO)	WMO Schedule D	(3 Pages)
<input type="checkbox"/> Detention & Stormwater Management Facilities (Legacy)	WMO Schedule D <sub>Legacy</sub>	(4 Pages)
<input type="checkbox"/> Lift Station and/or Force Main	WMO Schedule E	(2 Pages)
<input type="checkbox"/> Characteristics of Waste Discharge	WMO Schedule F	(2 Pages)
<input type="checkbox"/> Treatment or Pretreatment Facilities	WMO Schedule G	(2 Pages)
<input checked="" type="checkbox"/> Hazard Areas (Floodplain / Floodway /Riparian Areas)	WMO Schedule H	(2 Pages)
<input type="checkbox"/> Affidavit Relative to Compliance with Article 7	WMO Schedule J	(1 Page)
<input type="checkbox"/> Affidavit of Disclosure of Property Interest	WMO Schedule K	(2 Pages)
<input type="checkbox"/> Notice of Requirements for Storm Water Detention	WMO Schedule L	(2 Pages)
<input type="checkbox"/> Current Survey of Property Interests (Attachment for Schedule K or L)	Exhibit A	
<input type="checkbox"/> Outfall, Direct Connection, District Owned or Leased Property	WMO Schedule O	(1 Page)
<input checked="" type="checkbox"/> Soil Erosion and Sediment Control	WMO Schedule P	(2 Pages)
<input type="checkbox"/> Recording and Maintenance	WMO Schedule R	(2 Pages)
<input type="checkbox"/> Recording Exhibit (Attachment for Schedule K or L)	Exhibit R	
<input checked="" type="checkbox"/> Wetlands and Wetland Buffer Areas	WMO Schedule W	(2 Pages)

Refer to Table 1 of § 201 of Article 2 of Watershed Management Ordinance for applicable Permitting Authority.

**OTHER DOCUMENTS:** Indicate title, number of pages and originator Plans for Proposed Federal Aid Highway, FAU Route 1103 (State and National Parkway) 260 pages by Civiltech Engineering, Inc.

**NOTE: ATTACH FEE PAYMENT VOUCHER AND PAYMENT IF APPLICABLE**

**DISTRICT USE ONLY**  
Application received: FEB 14 2018 WMO Permit issued: MAY 08 2018 WRP: Egan

Issued by:  DISTRICT  Authorized Municipality

**APPROVED**



### GENERAL CONDITIONS OF THE PERMIT

1. **Definitions.** The definitions of Appendix A of the Watershed Management Ordinance are incorporated into this Watershed Management Permit by reference. Additionally, the following words and phrases shall be defined as follows:
  - a) **Building and Occupancy Permit.** Building and Occupancy Permit issued by the Municipality.
  - b) **Design Engineer.** A Professional Engineer who prepares plans and specifications for the project, and signs the Watershed Management Permit Application.
  - c) **Inspection Engineer.** A Professional Engineer who inspects the development to ensure compliance with the design plans, specifications, a Watershed Management Permit, and the Watershed Management Ordinance.
  - d) **Permit.** Watershed Management Permit.
  - e) **General Conditions.** General Conditions contained in a Watershed Management Permit.
  - f) **Special Conditions.** Special conditions of this Watershed Management Permit.
2. **Adequacy of Design.** The schedules, plans, specifications and all other data and documents submitted for this Permit are made a part hereof. The Permit shall not relieve the Design Engineer of the sole responsibility for the adequacy of the design. The issuance of this Permit shall not be construed as approval of the concept or construction details of the proposed facilities and shall not absolve the Permittee, Co-Permittee or Design Engineer of their respective responsibilities.
3. **Joint Construction and Operation Permits.** Unless otherwise stated by the Special Conditions, the issuance of this Permit shall be a joint construction and operation permit, provided that the Permittee or Co-Permittee has complied with all General and Special Conditions.
4. **Allowable Discharges.** Discharges into the Sanitary Sewer system constructed under this Permit shall consist of sanitary Sewage only. Unless otherwise stated by the Special Conditions, there shall be no discharge of industrial wastes under this Permit. Stormwater shall not be permitted to enter the Sanitary Sewer system. Without limiting the general prohibition of the previous sentence, roof and footing drains shall not be connected to the Sanitary Sewer system.
5. **Construction Inspection.** All erosion and sediment control facilities, Stormwater Facilities, Detention Facilities, and Qualified Sewer Construction shall be inspected and approved by an Inspection Engineer acting on behalf of the Permittee or the Owner of the project, or by a duly authorized and competent representative of the Inspection Engineer. No sewer trenches shall be backfilled except as authorized by the Inspection

Engineer after having inspected and approved the sewer installation.

6. **Maintenance.** Stormwater Facilities, Detention Facilities, Qualified Sewer Construction, Sanitary Sewer lines, systems or facilities constructed hereunder or serving the facilities constructed hereunder shall be properly maintained and operated at all times in accordance with all applicable requirements. It is understood that the responsibility for maintenance shall run as a joint and several obligation against the Permittee, the Co-Permittee, the property served, the Owner and the operator of the facilities, and said responsibility shall not be discharged nor in any way affected by change of ownership of said property, unless the District has authorized assignment of the permit.
7. **Indemnification.** The Permittee shall be solely responsible for and shall defend, indemnify and hold harmless the Metropolitan Water Reclamation District of Greater Chicago ("District", "MWRD", or "MWRDGC") and its Commissioners, officers, employees, servants, and agents from liabilities of every kind, including losses, damages and reasonable costs, payments and expenses (such as, but not limited to, court costs and reasonable attorneys' fees and disbursements), claims, demands, actions, suits, proceedings, judgments or settlements, any or all of which are asserted by any individual, private entity, or public entity against the District and its Commissioners, officers, employees, servants, or agents and arise out of or are in any way related to the issuance of this Permit. Without limiting the generality of the preceding sentence, the provisions of this paragraph shall extend to indemnify and hold harmless the District and its Commissioners, officers, employees, servants, and agents from any claims or damages arising out of or in connection with the termination or revocation of this Permit.

The Permittee shall be solely responsible for and shall defend, indemnify and hold harmless an Authorized Municipality and its elected officials, officers, employees, servants, and agents from liabilities of every kind, including losses, damages and reasonable costs, payments and expenses (such as, but not limited to, court costs and reasonable attorneys' fees and disbursements), claims, demands, actions, suits, proceedings, judgments or settlements, any or all of which are asserted by any individual, private entity, or public entity against the Authorized Municipality and its elected officials, officers, employees, servants, or agents and arise out of or are in any way related to the issuance of this Permit. Without limiting the generality of the preceding sentence, the provisions of this paragraph shall extend to indemnify and hold harmless the Authorized Municipality and its elected officials, officers, employees, servants, and agents from any claims or damages arising out of or in connection with the termination or revocation of this Permit.



8. **Sewer Construction by District.** Permittee understands and acknowledges that the District has the right and power to construct and extend sewer service facilities and render such services within the area to be served by the project for which this Permit is issued, and that by the District constructing and extending such sewer service facilities and rendering such services, the facilities constructed by the Permittee under this Permit may decrease in value, become useless or of no value whatsoever, the Permittee may also sustain a loss of business, income and profits.

Therefore, by accepting this Permit and acting thereon, the Permittee, for itself, its successors and assigns, does remise, release and forever discharge the District and its Commissioners, officers, employees, servants, and agents of any and all claims whatsoever which Permittee may now have or hereafter acquire and which Permittee's successors and assigns hereafter can, shall, or may have against the District and its Commissioners, officers, employees, servants, and agents for all losses and damages, either direct or indirect, claimed to have been incurred by reason of the construction or extension at any time hereafter by the District of sewer service facilities in the service area contemplated by this Permit, the rendering of such services, which District facilities and services decrease the value of the facilities constructed by the Permittee under this Permit, make same useless or of no value whatsoever, including but not limited to, any and all damages arising under 70 ILCS 2605/19; the taking of private property for public use without due compensation; the interference with the contracts of Permittee; the interference with Permittee's use and enjoyment of its land; and the decrease in value of Permittee's land.

9. **Third Parties.** Regarding Qualified Sewer Construction, this Permit does not grant the right or authority to the Permittee: (a) to construct or encroach upon any lands of the District or of any other parties, (b) to construct outside of the territorial boundaries of the District except as allowed under an extraterritorial service agreement, (c) to construct or encroach upon the territorial boundaries of any units of local government within the District, (d) to connect to or discharge into or be served by (directly or indirectly) any sewer or sewer system owned or operated by third parties.

10. **Costs.** It is expressly stipulated and clearly understood that the Stormwater Facilities, Detention Facilities, Qualified Sewer Construction, or facilities for which the Permit is issued shall be constructed, operated and maintained at no cost to the District.

11. **Other Sewer Construction.** The District reserves the right, privilege and authority to permit others to reconstruct, change, alter and replace all sewers and appurtenances thereto at the point of connection of any sewerage system to a District interceptor and/or in public

right-of-ways of District easements, and to introduce additional Sewage flow through this connection into the intercepting sewer of said District.

12. **Change of Use.** This Permit shall be incorporated in the Building and Occupancy Permit for the Building or Buildings served under this Permit. The Owner or occupant of any Building served under this Permit shall not cause, or permit, a change of use of the Building to a use other than that indicated in this Permit without first having obtained a written permission from the Executive Director of the District.

13. **Interceptors Overloading.** The District hereby serves notice that its interceptors may flow full and may surcharge, and flooding of the proposed system may occur. The Permittee agrees that the proposed systems shall be constructed, operated and maintained at the sole risk of the Permittee.

14. **Transferability.** This Permit may not be assigned or transferred without the written consent of the Executive Director of the District or Enforcement Officer of an Authorized Municipality. However, a Sole Permittee may be required to assign or transfer the Permit when divesting itself of ownership to a third-party and should notify the District prior to such divestment so that the District may determine whether assignment to the new owner is necessary.

15. **Termination.** The District has the right to enforce or revoke a Permit issued by either the District or an Authorized Municipality as outlined in Article 12 of the Watershed Management Ordinance.

It is understood and agreed that in the event the Permittee shall default on or fail to perform and carryout any of the covenants, conditions or provisions of this Permit and such default or violation shall continue for sixty (60) days after receipt of notice thereof in writing given by the Executive Director of the District, then it shall be lawful for the District at or after the expiration of said sixty (60) days to declare said Permit terminated. The Permittee agrees that immediately upon receipt of written notice of such termination it will stop all operations, discontinue any discharges and disconnect the sewerage system or facilities constructed under this Permit. If the Permittee fails to do so, the District shall have the right to disconnect said system. The Permittee hereby agrees to pay for any costs incurred by the District for said disconnection.

16. **Rights and Remedies.** The various rights and remedies of the District contained in this Permit shall be construed as cumulative, and no one of them shall be construed as exclusive of any one or more of the others or exclusive of any other rights or remedies allowed by applicable rules, regulations, ordinances and laws. An election by the District to enforce any one or more of its rights or



remedies shall not be construed as a waiver of the rights of the District to pursue any other rights or remedies provided under the terms and provisions of this Permit or under any applicable rules, regulations, ordinances or laws.

- 17. **Expiration.** This Permit shall expire if construction has not started within one (1) year from the date of issue. Construction under an expired Permit is deemed construction without a Permit. All construction under this Permit shall be completed within two (2) years after start of construction. If conditions so warrant, an extension may be granted. For publicly financed projects (e.g. special assessments) the one (1) year period indicated will be considered from the date of final court action.
- 18. **Revocation.** In issuing this Permit, the District or Authorized Municipality has relied upon the statements and representations made by the Permittee or his agent. Any incorrect statements or representations shall be cause for revocation of this Permit, and all the rights of the Permittee hereunder shall immediately become null and void.
- 19. **Advance Notice.** The Permittee shall give the District or Authorized Municipality advance notice of at least two working days prior to the following: mobilization and installation of Erosion and Sediment Control Practices; commencement of construction; excavation for Qualified Sewer Construction; Major Stormwater Systems and Detention Facilities under this Permit; and completion of construction. When advance notice is given, the Permittee shall provide the Permit number, municipality and location.
- 20. **Compliance with Plans and Specifications.** All construction shall be in accordance with the plans and specifications submitted for this Permit and made a part hereof. No changes in, or deviation from the plans and specifications which affect capacity, maintenance, design requirements, service area or Permit requirements shall be permitted unless revised plans have been submitted to, and approved by the District or Authorized Municipality. The Permit together with a set of the plans and specifications (revised plans and specifications, if any) shall be kept on the jobsite at all times during construction and until final inspection and approval by the District or Authorized Municipality.
- 21. **Testing and Approval.** All construction under this Permit shall be subject to inspection, testing and approval by the District. All testing shall be made, or caused to be made, by the Permittee at no cost to the District and in the presence of the District representative. Upon satisfactory completion of construction, the Permittee and the owner shall submit, or cause to be submitted, a completion certificate and request for approval on the form prescribed by the District. No sewer

or other facilities shall be put in service until all the conditions of the Permit have been satisfactorily met.

- 22. **Record Drawings.** Before final inspection and approval by the District or an Authorized Municipality, the Permittee shall furnish, or cause to be furnished to the District or an Authorized Municipality, a set of Record drawings and Schedule R for the site stormwater plan, Detention Facilities, Stormwater Facilities, and Qualified Sewer Construction, or a statement that the project was constructed in accordance with the original plans and specifications.
- 23. **Compliance with Rules and Regulations.** The Permittee hereby expressly assumes all responsibilities for meeting the requirements of all applicable rules, regulations, ordinances and laws of Local, State and Federal authorities. Issuance of this Permit shall not constitute a waiver of any applicable requirements.
- 24. **Severability.** The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit, is held invalid, the remaining provisions of this Permit shall continue in full force and effect.
- 25. **Property Rights.** This Permit does not convey any property rights of any sort, or any exclusive privilege.
- 26. **Conflict with Other Conditions.** In the case of conflict between these General Conditions and any other condition(s) in this permit, the more stringent condition(s) shall govern.

WMO SCHEDULE A PROJECT INFORMATION

Watershed Management Permit No.

1. NAME OF PROJECT FAU Route 1103 (State and National Parkway) (as shown on the plans)

2. APPURTENANCES (check all applicable items)

- Siphon, Drop Manholes, Public Lift Station, Outfalls, Stream Crossing, Direct Connections to District

3. RECEIVING SANITARY/COMBINED SEWER SYSTEM

A. System that project will connect to is:

- Existing, Proposed /Under Construction -> District Permit #

List owners of all sewers from project to District interceptor Village of Schaumburg

4. RECEIVING STORM SEWER SYSTEM TRIBUTARY TO WATERWAY

A. System that project will connect to is:

- Existing, Proposed /Under Construction -> District Permit #

List owners of all sewers from project to waterway Village of Schaumburg

5. EXISTING LIFT STATION

- No, Yes -> Receiving system includes existing lift station

If yes, indicate location

6. FLOOD PROTECTION AREAS

Does any part of the project area impact the following? (check all applicable items)

- Floodplain/Floodway/Riparian, Wetlands/Riparian

7. SIZE OF PROJECT

Impervious area within project

- Total contiguous ownership, Development Area, Before development, After development

8. STORMWATER MANAGEMENT

A. Is project in the service area of an existing District permitted detention facility?

- No, Yes -> District Permit No.

B. Is stormwater management provided under this permit?

- No, Yes -> Required by: District, Other

C. Type of stormwater management

- Runoff Control, Volume Control, Detention Storage



**WMO SCHEDULE B  
SEWER SUMMARY**

Watershed Management Permit No.

**18-054**

PROJECT NAME: FAU Route 1103 (State and National Parkway)

(as shown on the plans)

1. **SEWER SUMMARY:** Include all qualified sewer construction sewers (Sanitary sewers in combined and separate sewer areas and Storm sewers in combined sewer area) and their tributary type: Sanitary (San), Combined (C), Storm to Combined (SC), Storm to Waterway (SW), or Storm part of Volume Control (SVC)

Tributary Type	Choose an San	Choose an Choose one	Choose an Choose one	Choose an Choose one	Choose an Choose one	Choose an Choose one	Choose an Choose one
Pipe Size (in.)	6						
Total Length (ft.)	76						
Min. slope used (%)	3.20						
Pipe Material *	PVC						
Total Manholes	2						
Total Cleanouts							
Catch Basin/Inlets							

\* Pipe material and joint specifications must be shown on plans. See Technical Guidance Manual for acceptable specifications.

Sewer construction in floodplain:  No  Yes → FPE 729.90 ft.

Sanitary Manholes in floodplain None

Note: All structures shall have lids located above the FPE or be constructed with watertight, bolt down covers/lids.

2. **NATURE OF PROJECT** (Check all that apply)

Brief description Narrowing and reconstruction of State and National Parkway

- Publicly financed  Sewer extension to serve future development  
 Sewer system serving a subdivision  Storm sewers in combined sewer area  
 Off-site trunk sewer to serve subdivision  Service connections to serve buildings (Sch. C)  
 Other \_\_\_\_\_

3. **SEWER EXTENSIONS**

Identify proposed project designed to service future connections (not included in Schedule C). Check the appropriate box and submit service area map and estimate of population equivalent (PE) to be served.

- NO  YES →  Service area map  
 P.E. estimate submitted

**WMO SCHEDULE C** Watershed Management Permit No. **18-054**  
**SEWER CONNECTIONS**  
 (FILL OUT ALL SECTIONS THAT APPLY)

**1. BUILDING CONNECTION DATA**

**A. RESIDENTIAL BUILDINGS**

<input type="checkbox"/> Single Family	Total dwelling units *	_____	
	Number of sewer connections *	_____	PE** _____
<input type="checkbox"/> Multi Family	Total dwelling units *	_____	
	Number of sewer connections *	_____	PE** _____

**B. COMMERCIAL & RECREATIONAL BUILDINGS**

Number of sewer connections \_\_\_\_\_ PE\*\* \_\_\_\_\_

**C. INDUSTRIAL BUILDINGS**

Number of sewer connections \_\_\_\_\_ PE\*\* \_\_\_\_\_

\* Each sanitary line exiting a building is a connection  
 \*\* Population Equivalent (Submit calculations for each connection and total from all connections)

**2. BUILDING USE - (Check all that apply)**

**A. COMMERCIAL & RECREATIONAL**

Describe use of buildings, including principal product(s) or activities \_\_\_\_\_

<input type="checkbox"/> Food preparation or processing (install grease separator)	<input type="checkbox"/> Laundromat (install lint basin)
<input type="checkbox"/> Swimming pool (provide pool plans)	<input type="checkbox"/> Auto service (install triple basin)
<input type="checkbox"/> Manufacturing (describe) _____	<input type="checkbox"/> Auto wash (install mud basin)
<input type="checkbox"/> Other _____	

**B. INDUSTRIAL BUILDINGS**

Describe use of buildings, including principal product(s) or activities \_\_\_\_\_

Sewer connections will receive domestic sewage only  
 Industrial waste is produced

**NOTE:** If industrial waste is produced, submit WMO Schedule F & WMO Schedule G and plumbing plans along with flow diagram for pretreatment system.



**WMO SCHEDULE H  
FLOODPLAIN/FLOODWAY & RIPARIAN ENVIRONMENTS**

Name of Project: FAU Route 1103 (State and National Parkway)

Type of Development (check one below):

- Single-family home     
  Residential Subdivision     
  Multi-family residential  
 Non-residential     
  Right-of-way     
  Open space

1) Provide the Cook County FIRM panel(s) for the site: 17031C0191J

2) Is there regulatory floodplain located onsite?  Yes  No  
 If yes, provide the name(s) of the flooding sources: Salt Creek, West Branch

3) Is there Zone A floodplain within 100 feet of the project site or does the site require a project-specific floodplain study?  Yes  No

4) If the answer to (2) or (3) is yes, provide the BFE on the project site to the nearest 0.1 ft. If more than one BFE, list each individually: varies from 730.9 to 727.6 ft, NAVD 88

5) Provide the elevation source(s) of the BFE(s) from (4): Flood Profile

6) If the development includes a new building, an addition to an existing building, or substantial improvement to an existing building in the regulatory floodplain, provide the lowest floor elevation: N/A ft, NAVD 88

7) Does the project result in fill in the floodplain?  Yes  No  
 If yes, provide the floodplain fill and compensatory storage quantities below:

<u>Floodplain Fill (acre-feet)</u>		<u>Compensatory Storage Provided (acre-feet)</u>	
<u>0.02126</u>	0 -10 Year	<u>0.07289</u>	0 -10 Year*
<u>0.04897</u>	10 - 100-Year	<u>0.05603</u>	10 - 100-Year*
<u>0.07023</u>	Total	<u>0.12892</u>	Total**

\*Must be at least 1.0 times the floodplain fill  
 \*\* Must be at least 1.1 times the floodplain fill

8) Is any part of the development in the regulatory floodway?  Yes  No  
 If yes, describe appropriate use: 3708.70 item c.7, Bridges, Culverts, and Roadways

WMO SCHEDULE H  
FLOODPLAIN/FLOODWAY & RIPARIAN ENVIRONMENTS

9) Does the development involve a waterway with greater than one square mile of tributary area?  Yes  No

10) If answer to (8) or (9) is yes, provide a copy of the IDNR-OWR Floodway Construction Permit for the development.

11) Is there riparian environment located onsite?  Yes  No  
If yes, check the conditions that apply:

Jurisdictional Waters of the U.S. (50-ft buffer from OHWM)

Isolated Waters (30-ft buffer from OHWM)

Jurisdictional or isolated waters with BSC of "A" or "B" or BSS Streams (100-ft buffer from OHWM)

12) If answer to (11) is yes, does the proposed development result in adverse impacts to the riparian environment?  Yes  No

13) If answer to (12) is yes, prepare riparian submittal and provide a brief description of the impacts and mitigation below:

Name Tom Liliensiek Title Director of Water Resources

Signature *Thomas Liliensiek* Date 3/27/2018

Engineering Firm Civiltech Engineering, Inc.





**WMO SCHEDULE P  
SOIL EROSION AND SEDIMENT CONTROL**

Name of Project: FAU Route 1103 (State and National Parkway)

Type of Development (check one below):

- Single-family home       Residential Subdivision       Multi-family residential  
 Non-residential       Right-of-way       Open space

1) Total proposed disturbed area: 12.2 acres

2) Does the site's stormwater discharge directly to:

- Waters of the State     Storm Sewer     Combined Sewer

If Waters of the State, provide name of receiving water body: Salt Creek West Branch

3) If answer to (1) is  $\geq$  one acre or part of a larger planned common development  $\geq$  one acre, provide IEPA NPDES ILR10 Permit Number\*: \_\_\_\_\_

If ILR10 permit coverage applies, provide a signed copy of ILR10 Notice of Intent (NOI)

\*If all site stormwater discharges, including construction dewatering, drain to a combined sewer system, ILR10 permit coverage is not required

4) Summary of soil erosion and sediment control practices:

			Area Controlled (sq ft)	Permanent (P), Temporary (T), OR Both (B)
<b>Silt fence</b>	<u>800</u> (ft)		<u>5,800</u>	<u>T</u>
<b>Entrance/exit control</b>	_____ (quantity)		_____	_____
<b>Vegetative control</b>	<u>209,043</u> (sq ft)		<u>209,043</u>	<u>P</u>
<b>Interceptor ditches</b>	_____ (ft)		_____	_____
<b>Berms</b>	_____ (ft)		_____	_____
<b>Inlet control</b>	<u>131</u> (quantity)		<u>247,000</u>	<u>T</u>
<b>Sediment basins</b>	_____ (cu yd)		_____	_____
<b>Volume Control Protection</b>	_____ (indicate)		_____	_____
<b>Volume Control Cleaning</b>	_____ (indicate)		_____	_____
<b>Concrete Washout</b>	<u>1</u> (quantity)		_____	<u>T</u>
<b>Debris basins</b>	_____ (cu ft)		_____	_____
<b>Desilting basins</b>	_____ (cu ft)		_____	_____
<b>Silt traps</b>	_____ (cu ft)		_____	_____
<b>Mulching and matting</b>	<u>16,596 SF</u> (cu ft/sq ft)		<u>16,596</u>	<u>P</u>
<b>Other</b>	_____ (indicate)		_____	_____

**WMO SCHEDULE P  
SOIL EROSION AND SEDIMENT CONTROL**

5) Do any of the following special circumstances apply?

Yes    No

If yes, check all conditions that apply:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> Floodplain   | <input checked="" type="checkbox"/> Wetland/Buffer | <input checked="" type="checkbox"/> Riparian Environment |
| <input type="checkbox"/> New Outfall             | <input type="checkbox"/> MWRD Facility             | <input type="checkbox"/> Tributary to Lake Michigan      |
| <input type="checkbox"/> Volume Control Facility |  |  |

6) If the answer to (5) is yes, describe how the indicated area(s) will be protected from erosion and sedimentation: Inlet filters will be placed in all open lid structures that drain to these areas. Temporary seeding will be used on all disturbed surfaces until final stabilization is constructed. Permanent seeding with erosion control blanket or turf reinforcement mat will be used to stabilize the side slopes along the median.

7) Provide topographical or plan maps of construction area and indicate erosion control practices, including a sequence of major construction activities.

8) Drainage area (above and including construction site): 990 acres

9) Slope categories of construction site:

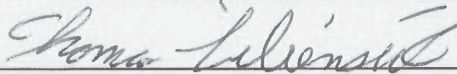
		Area (acres)	Disposition of Collected Sediment
9.1	0 – 2 % Slope	<u>7</u>	<u>Collected sediment shall be disposed of off-site.</u>
9.2	2 – 4 % Slope	<u>2</u>	_____
9.3	4 – 6 % Slope	<u>1.1</u>	_____
9.4	≥ 6% Slope	<u>2.1</u>	_____

10) Check the following conditions that apply:

Erosion control practices identified above will be constructed in accordance with the Illinois Urban Manual, 2012

Plans or specifications for the above referenced erosion control practices are attached

Co-Permittee Thomas Liliensierk, P.E. Title Director of Water Resources

Signature  Date 2/7/2018

Company/Agency Civiltech Engineering, Inc.



WMO SCHEDULE W  
WETLANDS, BUFFERS & RIPARIAN ENVIRONMENTS

Name of Project: FAU Route 1103 (State and National Parkway)- Site 1

Type of Development (check one below):

- Single-family home
- Residential Subdivision
- Multi-family residential
- Non-residential
- Right-of-way
- Open space

\*If multiple wetlands are located onsite, fill out separate Schedule W for each

- 1) Is there wetland or farmed wetland on the development site?  Yes  No
  - A) If yes, submit a request for jurisdictional determination to the US Army Corps of Engineers (Corps) and provide a copy of the determination letter.
  - B) Is the onsite wetland isolated?  Yes  No
  - C) Is the onsite wetland considered to be a high quality isolated wetland?  Yes  No
  - D) If applicable, will the onsite isolated wetland or associated buffer be impacted by the development?  Yes  No If yes, see Steps 3 and 8.
  - E) Is the onsite wetland Corps regulated?  Yes  No
  - F) If applicable, will the onsite Corps regulated wetland be impacted by the development?  Yes  No If yes, provide a copy of Corps permit.
  - G) If answer to 1.(F) is no, will the associated wetland buffer be impacted by the development?  Yes  No If yes, see Steps 3 and 8.

- 2) Is wetland or farmed wetland located within 100 feet of the development site?  Yes  No

If yes, does the wetland buffer extend onto the development?  Yes  No

If yes, is the buffer impacted by the development?  Yes  No

If yes, see Steps 3 and 8.

- 3) If the answer to either (1.C), (1.D), (1.F), (1.G) or (2) is yes, prepare a wetland/buffer submittal and briefly describe the impacts and proposed mitigation below: \_\_\_\_\_

See the attached Wetland, Riparian, and Buffer Submittal Narrative. A total of 0.24 acre of permanent impacts and 0.02 acre of temporary impacts are proposed. The proposed impacts are a beneficial impact and do not constitute a loss of resources.

WMO SCHEDULE W
WETLANDS, BUFFERS & RIPARIAN ENVIRONMENTS

- 4) Is there riparian environment located onsite? [x] Yes [ ] No
If yes, check the conditions that apply:
[x] Jurisdictional Waters of the U.S. (50-ft buffer from OHWM)
[ ] Isolated Waters (30-ft buffer from OHWM)
[ ] Jurisdictional or isolated waters with BSC of "A" or "B" or BSS Streams (100-ft buffer from OHWM)
5) If answer to (4) is yes, does the proposed development result in adverse impacts to the riparian environment? [x] Yes [ ] No
6) If answer to (5) is yes, prepare riparian submittal and provide a brief description of the impacts and mitigation below: The existing riparian environment of Salt Creek West Branch (Site 1) includes the vegetated area within the median of State and National Parkways. The proposed temporary impacts are a beneficial impact and will not constitute a loss of resources as the area will be restored to its existing condition.
7) Is detention proposed in the wetland? [ ] Yes [x] No If yes, proceed to 7(A) and 7(B)
A) Is the wetland regulated by the Corps and a Corps permit is required for the development? [x] Yes [ ] No
If yes, did the Corps approve placing detention in the wetland? [ ] Yes [x] No
If no, detention is not allowed in the wetland
If yes, complete the required hydrologic study
B) Is the wetland isolated? [ ] Yes [x] No
If the isolated wetland is considered high quality, detention is not allowed
If yes, complete the required hydrologic study
8) If answers (1.D) (1.F) (1.G) (2) (6) and (7) are yes, prepare wetland, buffer and riparian environment submittals with supporting documentation along with the Watershed Management Permit application.

Wetland Specialist Kevin Walsh Title Lake County CWS-168
Signature [Handwritten Signature] Date 01/29/18
Company/Agency HUFF + HUFF / GZA



WMO SCHEDULE W  
WETLANDS, BUFFERS & RIPARIAN ENVIRONMENTS

Name of Project: FAU Route 1103 (State and National Parkway) - Site 2

Type of Development (check one below):

- Single-family home
- Residential Subdivision
- Multi-family residential
- Non-residential
- Right-of-way
- Open space

\*If multiple wetlands are located onsite, fill out separate Schedule W for each

- 1) Is there wetland or farmed wetland on the development site?  Yes  No
  - A) If yes, submit a request for jurisdictional determination to the US Army Corps of Engineers (Corps) and provide a copy of the determination letter.
  - B) Is the onsite wetland isolated?  Yes  No
  - C) Is the onsite wetland considered to be a high quality isolated wetland?  Yes  No
  - D) If applicable, will the onsite isolated wetland or associated buffer be impacted by the development?  Yes  No If yes, see Steps 3 and 8.
  - E) Is the onsite wetland Corps regulated?  Yes  No
  - F) If applicable, will the onsite Corps regulated wetland be impacted by the development?  Yes  No If yes, provide a copy of Corps permit.
  - G) If answer to 1.(F) is no, will the associated wetland buffer be impacted by the development?  Yes  No If yes, see Steps 3 and 8.

- 2) Is wetland or farmed wetland located within 100 feet of the development site?  Yes  No

If yes, does the wetland buffer extend onto the development?  Yes  No

If yes, is the buffer impacted by the development?  Yes  No

If yes, see Steps 3 and 8.

- 3) If the answer to either (1.C), (1.D), (1.F), (1.G) or (2) is yes, prepare a wetland/buffer submittal and briefly describe the impacts and proposed mitigation below: \_\_\_\_\_

See the attached Wetland, Riparian, and Buffer Submittal Narrative. Permanent and temporary impacts to Lake Dinkel/Salt Creek West Branch (Site 2) are not proposed.

WMO SCHEDULE W  
WETLANDS, BUFFERS & RIPARIAN ENVIRONMENTS

4) Is there riparian environment located onsite?  Yes  No

If yes, check the conditions that apply:

Jurisdictional Waters of the U.S. (50-ft buffer from OHWM)

Isolated Waters (30-ft buffer from OHWM)

Jurisdictional or isolated waters with BSC of "A" or "B" or BSS Streams (100-ft buffer from OHWM)

5) If answer to (4) is yes, does the proposed development result in adverse impacts to the riparian environment?  Yes  No

6) If answer to (5) is yes, prepare riparian submittal and provide a brief description of the impacts and mitigation below: The existing Lake Dinkel/Salt Creek West Branch (Site 2) includes the vegetated area that extends from five to 40 feet from the OHWM of Site 2. The proposed temporary impacts do not constitute a loss of resources as the riparian environment will be restored to its existing condition.

7) Is detention proposed in the wetland?  Yes  No If yes, proceed to 7(A) and 7(B)

A) Is the wetland regulated by the Corps and a Corps permit is required for the development?

Yes  No

If yes, did the Corps approve placing detention in the wetland?  Yes  No

If no, detention is not allowed in the wetland

If yes, complete the required hydrologic study

B) Is the wetland isolated?  Yes  No

If the isolated wetland is considered high quality, detention is not allowed

If yes, complete the required hydrologic study

8) If answers (1.D) (1.F) (1.G) (2) (6) and (7) are yes, prepare wetland, buffer and riparian environment submittals with supporting documentation along with the Watershed Management Permit application.

Wetland Specialist Kevin Walsh Title Lake County CWS-168

Signature  Date 01/29/18

Company/Agency HUFF + HUFF / GZA



## **SPECIAL CONDITIONS FOR MWRD PERMIT NO 18-054**

1. Construction must conform to the soil erosion and sediment control requirements of this permit and any other local, state, and/or federal agencies.
2. Construction must conform to the floodplain requirements of this permit and any other local and/or state requirements.
3. Construction must conform to the wetland and riparian requirements of this permit and the requirements of the U.S. Army Corps of Engineers.
4. Construction must conform to the compensatory storage requirements of this permit and any other local and/or state requirements.
5. Construction must conform to the floodway requirements of this permit and the requirements of the Illinois Department of Natural Resources – Office of Water Resources (IDNR – OWR).
6. Construction covered by this permit is located in a designated floodplain according to the data source specified in the permit. The Permittee/Co-Permittee is hereby warned, and does hereby acknowledge, that the indemnification clause of this permit (General Condition No. 7) shall protect MWRD from any consequences caused by flood or high water. The Permittee/Co-Permittee assumes any and all liability for any claims and/or damages that may arise as a result of flood or high water.

# ENGINEERING CERTIFICATIONS

# 18-054

Watershed Management Permit No. \_\_\_\_\_

**CERTIFICATE BY DESIGN ENGINEER:** I hereby certify that the project described herein has been designed in accordance with the requirements set forth in this application and all applicable ordinances, rules, regulations, local, state and federal laws, and design criteria of the issuing authority; that the storm drainage and sanitary sewer system designed for this project are proper and adequate; that where the design involves one or more connections to an existing local sewer system, the capacity of said system has been examined and the system is found to be adequate to transport the stormwater and/or wastewater that will be added through the proposed sewer without violating any provisions of the Illinois Environmental Protection Act or the rules and regulations thereunder.

Comments, if any: \_\_\_\_\_

Engineering Firm: Civiltech Engineering, inc. Telephone: (312) 564 - 2492

Address: 30 N. LaSalle Suite 2624 City: Chicago Zip: 60602



Signature: Thomas Liliensiek - Director of Water Resources Date: 1/24/2018  
(Name and Title)

Email Address: tliliensiek@civiltechinc.com

**CERTIFICATE BY MUNICIPAL OR SYSTEM ENGINEER:** The application and the drawings, together with other data being submitted with this application, have been examined by me and are found to be in compliance with all applicable requirements. The manner of drainage is satisfactory and proper in accordance with local requirements. The existing local sewer system to which the project discharges has been examined and the system is found to be adequate to transport the stormwater and/or wastewater that will be added through the proposed sewer without violating any provisions of the Illinois Environmental Protection Act or the rules and regulations thereunder.

I hereby certify that the project area is within the municipal corporate limits.  YES  NO

Owner of Local Sewer System: Village of Schaumburg

Municipal Engineer: David Lawry Telephone: 847.923.6600

Address: 714 S. Plum Grove Road City: Schaumburg Zip: 60193



Signature: David Lawry Engr. PW Date: 1/26/18  
(Name and Title)

Email Address: dlawry@ci.schaumburg.il.us

**CERTIFICATE BY INSPECTION ENGINEER:** I hereby certify that construction of the project will be in substantial compliance with the data and the plans submitted with this application; that approval will be obtained from the issuing authority prior to making any changes that would affect capacity, maintenance, design requirements, service area or the Permit requirements; that a set of RECORD drawings, signed and sealed by the undersigned Engineer will be furnished to the District or an Authorized Municipality before testing and approval by the District or Authorized Municipality of the completed work.

Engineering Firm: Civiltech Engineering, Inc. Telephone: 312.564.2492

Address: 30 N. LaSalle Suite 2624 City: Chicago Zip: 60602



Signature: Thomas Liliensiek - Director of Water Resources Date: 1/24/2018  
(Name and Title)

Email Address: tliliensiek@civiltechinc.com



# SPECIAL CONDITIONS

Watershed Management Permit No.

**18-054**

This Permit is issued subject to the General Conditions and the attached Special Conditions.

If Permit is granted:


- Please return two (2) copies of the Permit to the Permittee; or
- Please mail one (1) copy to Permittee and one (1) copy to the person designated below:

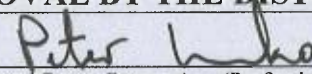
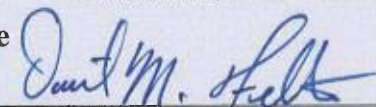
Name: Tom Liliensiek - Civiltech Engineering

Address : 30 N LaSalle Suite 2624, Chicago, IL 60602

Email : tliliensiek@civiltechinc.com

**CERTIFICATE BY APPLICANTS:** We have read and thoroughly understand the conditions and requirements of this Permit application, and agree to conform to the Permit conditions and other applicable requirements of the District. It is understood that construction hereunder, after the Permit is granted, shall constitute acceptance by the applicants of any Special Conditions that may be placed hereon by the District or an Authorized Municipality. It is further understood that this application shall not constitute a Permit until it is approved, signed and returned by the Director of Engineering of the District or Enforcement Officer of an Authorized Municipality.

PERMITTEE	CO-PERMITTEE
<p>The project area is within municipal corporate limits.</p> <p><input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> Not Applicable</p>	<p>(Co-Permittee is Property Owner)</p> <p>Title to property is held in a land trust: <input type="checkbox"/> Yes   <input type="checkbox"/> No</p> <p>If yes, Co-Permittee shall be beneficiary with Power of Direction</p>
Municipality <u>Village of Schaumburg</u>	Owner _____
Address <u>714 S. Plum Grove Road</u>	Address _____
City <u>Schaumburg</u> Zip <u>60193</u>	City _____      Zip _____
Signature 	Signature _____
Name <u>David Lawry</u> (Print)	Name _____ (Print)
Title <u>Director of Engineering and Public Works</u>	Title _____
Date <u>1/26/18</u> Phone <u>847-923-6600</u>	Date _____      Phone _____
Email <u>dlawry@ci.schaumburg.il.us</u>	Email _____

REVIEW AND APPROVAL BY THE DISTRICT OR AUTHORIZED MUNICIPALITY	
Reviewed by: <u></u> (Local Sewer Systems) or (Professional Engineer)	Date <u>5-08-2018</u>
Approved for Issue Approved by: <u></u> (For the Director of Engineering) or (Enforcement Officer)	Date <u>5/8/2018</u>



Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

## 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: State and National Parkways, Schaumburg Office Phone Number, if available: \_\_\_\_\_

Physical Site Location (address, including number and street): \_\_\_\_\_

State Parkway 300 ft east of Plum Grove Rd to Tower Rd, and National Parkway from Tower Rd to Golf Rd (IL Rt 58)

City: Schaumburg State: IL Zip Code: 60173

County: Cook Township: Schaumburg

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 42.055591 Longitude: -88.053032°  
(Decimal Degrees) (-Decimal Degrees)

Identify how the lat/long data were determined:

GPS  Map Interpolation  Photo Interpolation  Survey  Other

Google Earth

IEPA Site Number(s), if assigned: \_\_\_\_\_ BOL: \_\_\_\_\_ BOW: \_\_\_\_\_ BOA: \_\_\_\_\_

### II. Owner/Operator Information for Source Site

Site Owner

Site Operator

Name: Village of Schaumburg

Name: Village of Schaumburg

Street Address: 714 S. Plum Grove Road

Street Address: 714 S. Plum Grove Road

PO Box: \_\_\_\_\_

PO Box: \_\_\_\_\_

City: Schaumburg State: IL

City: Schaumburg State: IL

Zip Code: 60193 Phone: 847-923-6612

Zip Code: 60193 Phone: 847-923-6612

Contact: David L. Lawry, P.E.

Contact: David L. Lawry, P.E.

Email, if available: dlawry@ci.schaumburg.il.us

Email, if available: dlawry@ci.schaumburg.il.us

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.



Project Name: State and National Parkways, Schaumburg

Latitude: 42.055591 Longitude: -88.053032°

Uncontaminated Site 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):

Based on review of a PESA performed in September 2015, 6 PIPs are identified in connection to the Project Corridor. Soil borings were advanced in 13 locations to identify potential impacts associated with the PIPs. Refer to the attached narrative and figures for further details. The 2015 PESA Report, including database report, is attached.

- 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]:

Thirteen soil samples were screened with a PID and analyzed for one or more of the following: VOCs, BTEX, PNAs, metals, and pH. All soil results achieved their MACs, and pH ranged from 6.55 to 7.55, within the CCDD requirement. See attached narrative for further details.

**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. A Subsidiary of GZA GeoEnvironmental, Inc.

Street Address: 915 Harger Road, Suite 330

City: Oak Brook State: IL Zip Code: 60523

Phone: 630-684-4406

Jeremy J. Reynolds, P.G.

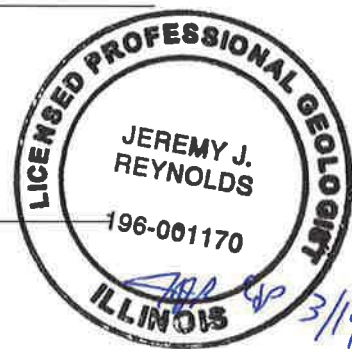
Printed Name:



Licensed Professional Engineer or  
Licensed Professional Geologist Signature:

July 17, 2017

Date:



P.E. or L.P.G. Seal:



July 17, 2017

CCDD LPC-663 Form Narrative  
State and National Parkways, Schaumburg Project  
Page | 3

### **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**

**Owner: Village of Schaumburg**

**Project Name: State and National Parkways**

### **III. Basis for Certification and Attachments**

Explain the basis upon which you are certifying that the soil from this site is uncontaminated soil.

This form pertains to soils excavated from approximately 300 feet east of Plum Grove Road to Tower Road, and along National Parkway from Tower Road to Golf Road (IL Route 58) (Project Corridor). A map depicting the Project Corridor location, potentially impacted properties (PIPs), and sample locations is included in **Attachment A**, and a photo log for the Project is included in **Attachment B**. A 2015 PESA report, including environmental database report, is included in **Attachment C (on CD)**. The analyses conducted and results are summarized at the end of this narrative. The laboratory analytical report, along with the soil pH sampling report, is included in **Attachment D**.

#### Due Diligence

H&H completed a Preliminary Environmental Site Assessment (PESA) for the Project Area in September 2015. The PESA Report (**Attachment A on CD**) identified seven (7) PIPs with the potential for encountering contamination within or near the proposed right-of-way (ROW) of the planned improvements in the Project Corridor. The identified PIPs are summarized in the following table. Note that Futaba Corp/Holland Motor Co is no longer considered a PIP due to a change in the project limits. The locations of the PIPs are depicted on Figure 1-3, included in **Attachment A**.

### Summary of Potentially Impacted Properties

Site Name	Figure 3-1 Site ID	Address	Reason(s)
Bob Rohrman Schaumburg KIA/ Woodfield Chevrolet/ Colonial Chevy	3	1100 E. Golf Road, Schaumburg, IL	LUST, RCRA, SPILLS, UST
Schaumburg Lincoln/ Northwest Lincoln Mercury	4	1200 E. Golf Road, Schaumburg, IL	LUST, RCRA, SPILLS, UST
Cintas/ Bork Transportation	10	1025 National Parkway, Schaumburg, IL	SPILLS, UST, ERNS
Traffic Solutions/ Brown Cartage Co./ Durbin/Patton	13	1020 Tower Road, Schaumburg, IL	AST, Chemical Storage
Woodfield Collision Center	16	1449 Payne Road, Schaumburg, IL	Auto Repair Facility
Southwestern Bell, Cingular Wireless, Cellular One, Edwards Engineering	25	840 E. State Parkway, Schaumburg, IL	LUST, SPILLS, UST
Futaba Corp/Holland Motor Co <sup>1</sup>	29	711 E. State Parkway, Schaumburg, IL	RCRA, SPILLS

<sup>1</sup>Due to change in project limits, site is approximately 700 feet from Project Corridor and no longer considered a PIP.

A summary of each site, as described in the PESA report, is presented below. Refer to the PESA report in **Attachment C** for further details.

**Bob Rohrman Schaumburg KIA/Woodfield Chevrolet/Colonial Chevy** (Map ID 3): The site located at 1100 E Golf Road is currently occupied by Bob Rohrman Schaumburg KIA, a car dealership, and is located at the northwest corner of National Parkway and Golf Road. The site appeared in the Leaking Underground Storage Tank (LUST), Resource Conservation Recovery Act (RCRA), SPILLS, and Underground Storage Tank (UST) databases under the names Woodfield Chevrolet and Colonial Chevy. A LUST incident occurred on November 22, 1991 involving the release of gasoline and used oil. This incident received a No Further Remediation (NFR) letter on May 22, 1996. A second LUST incident occurred on November 28, 1989 involving the release of non-petroleum products. This incident received a NFR letter on January 14, 2000. The site was listed as a small quantity RCRA generator of hazardous waste with listings of ignitable waste, benzene, tetrachloroethylene, and lead. A SPILLS incident occurred on November 22, 1991 involving the release of gasoline and waste anti-freeze from a UST due to rusting. A SPILLS incident occurred on November 18, 1989 involving the release of 300 to 400 gallons of new oil from a UST due to corrosion. The following USTs were listed at the site:

- Two 1,000-gallon USTs (removed, 1990)
- One 4,000-gallon gasoline UST (removed, 1991)
- One 550-gallon UST (removed, 1990)
- One 250-gallon UST (removed, 1991)



Due to the close proximity to the Project Corridor and history of releases, **this site is considered a PIP.**

**Schaumburg Lincoln/Northwest Lincoln-Mercury** (Map ID 4): The site located at 1200 E Golf Road is currently occupied by Schaumburg Lincoln, a car dealership. The site is located at the northeast corner of Golf Road and National Parkway. The site appeared in the LUST, RCRA, SPILLS, and UST databases and also appeared under the name Northwest-Lincoln Mercury. A LUST incident occurred on December 5, 1998 involving the release of gasoline. This incident received a NFR letter on May 7, 1999. A second LUST incident occurred on February 1, 1999 involving the release of fuel oil and used oil. This incident received a NFR letter on May 7, 1999. The site was listed as a conditionally exempt small quantity RCRA generator of spent non-halogenated solvents and ignitable waste. A SPILLS incident occurred on February 1, 1999 involving waste and new oil due to overfills and spills. An additional SPILLS event occurred on December 5, 1998 involving the release of gasoline due to piping overfills. The following USTs were listed for the site:

- One 4,000-gallon gasoline UST (out of service, 2013)
- One 1,250-gallon used oil UST (removed, 1999)
- One 500-gallon transmission oil UST (removed, 1999)
- One 1,250-gallon motor oil UST (removed, 1999)
- One 550-gallon used oil UST (removed, 1999)

Due to the close proximity to the project corridor and history of releases, **this site is considered a PIP.**

**Cintas/Bork Transportation** (Map ID 10): The site located at 1025 National Parkway is currently operated by Cintas. The site appeared in the ERNS, SPILLS and UST databases and also appeared under the name Bork Transportation with an address of 1026 State Parkway. Two identical SPILLS database entries were found relating to an incident that occurred on January 13, 2009 involving the release of 1,100 to 1,200 gallons of sodium hydroxide. The following USTs were listed at the site:

- One 10,000-gallon gasoline UST (abandoned in place, 1986)
- One 20,000-gallon diesel UST (abandoned in place, 1986)

Due to the presence of large USTs that were abandoned in place and the close proximity to the Project Corridor, **this site is considered a PIP.**

**Traffic Solutions/ Brown Cartage Co./Durbin Patton** (Map ID 13): The site located at 1020 Tower Road is occupied by Traffic Solutions, Brown Cartage Co., and Durbin/Patton. This site did not appear in any databases searched; however, during site reconnaissance an above ground storage tank (AST), likely containing gasoline or diesel fuel, and general chemical storage was observed on site. Due to the presence of an AST and chemical use/storage and the close proximity to the project corridor, **this site is considered a PIP.**

**Woodfield Collision Center** (Map ID 16): The site located at 1449 Payne Road and is occupied by the Woodfield Collision Center. This site did not appear in any databases searched; however, the site operates as a vehicle repair facility. Due to the potential for chemical use and storage and the close proximity to the project corridor, **this site is considered a PIP.**

**Southwestern Bell/ Cingular Wireless/ Cellular One/ Edwards Engineering** (Map ID 25): This site is located at 840 E State Parkway, and the current operator of the site could not be determined. The site address was identified as Southwestern Bell, Cingular Wireless, Cellular One, and Edwards Engineering in database entries in the LUST, SPILLS, and UST databases. A LUST incident occurred on January 1, 1991 involving the release of diesel fuel. This incident received a NFR letter on October 15, 2003. A second LUST incident occurred on January 28, 1997 involving the release of diesel fuel. This incident received a NFR letter on February 19, 1998. An additional LUST incident occurred on May 5, 2003 involving the release of diesel fuel. This incident received a NFR letter on October 15, 2003. A SPILLS incident occurred on January 1, 1991 involving



the release of an unknown quantity of diesel fuel from a UST. A SPILLS incident occurred on January 28, 1997 involving the release of an unknown quantity of diesel fuel. A SPILLS incident occurred on May 5, 2003 involving the release of an unknown quantity of diesel fuel. The following USTs were listed for the site:

- One 500-gallon heating oil tank (removed, 2003)
- One 550-gallon diesel fuel UST (removed, 1997)

Due to the close proximity to the Project Corridor and the history of releases, **this site is considered a PIP.**

**Futaba/Holland Motor Co** (Map ID 29): Subsequent to the 2015 PESA, the project layout was altered such that the improvements no longer extend west of Plum Grove Road. The site at 711 East State Parkway is no longer considered a PIP due to its distance (approximately 700 feet) from the Project Corridor.

#### Subsurface Investigation

The PIPs were further evaluated by a Preliminary Subsurface Investigation (PSI) to characterize soils within the Project Corridor, and to determine suitability for CCDD disposal of any excavated material. On May 25, 2017, Environmental Soil Probing (ESP), under the supervision of H&H, completed 13 soil borings to depths between 4 and 8 feet below ground surface (bgs), as appropriate, to reflect the maximum proposed depth of excavation for the Project Corridor. Soil boring locations were determined based on potential impacts associated with the six (6) PIPs, and to best represent the Project Corridor from a soil management perspective. Soil borings B-1 through B-9 were located to assess conditions adjacent to the PIPs. Borings B-10 through B-13 were performed for soil management and characterization purposes. Soil samples were submitted for analysis based on photo-ionization detector (PID) screening results, geological considerations, and other visual/olfactory observations. Samples were also analyzed for soil pH using a digital Hanna direct soil pH meter (HI99121) to assess CCDD suitability of Project Corridor soils. Efforts were made to analyze the soil sample which each COC would most likely impact based on the COC's characteristics and potential sources. A figure in **Attachment A** depicts the location of the soil borings in reference to the 6 identified PIPs. A photo log of the subsurface investigation is included in **Attachment B**.

The analysis conducted includes one or more of the following: volatile organic compounds (VOCs); benzene, toluene, ethylbenzene, and total xylenes (BTEX, a sub-set of VOCs); polynuclear aromatic compounds (PNAs); the Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver); total lead; and soil pH. The following table summarizes the samples analyzed by constituent.



### Summary of Sample Analyses

Boring ID	Depth, ft	VOCs	BTEX	PNAs	RCRA Metals	Lead	Soil pH
B-1	3-5						X
B-1	5-8	X		X		X	
B-2	1-3	X		X	X		X
B-3	3-5	X		X	X		
B-3	5-8						X
B-4	5-8	X		X		X	X
B-5	1-3						X
B-5	3-5	X		X			
B-6	0-1						X
B-6	3-5	X		X			
B-7	1-3	X					
B-7	3-5						X
B-8	3-5						X
B-8	5-8	X		X	X		
B-9	1-3						X
B-9	3-4		X			X	
B-10	3-4						X
B-11	0-1						X
B-12	5-8						X
B-13	0-1						X

Soil sample PID readings were at or near background as confirmed by laboratory analysis of samples. Tables summarizing the PID readings and analytical results are included at the end of this narrative, and the laboratory analytical report is included in **Attachment D** of this narrative for reference.

#### Analytical Results Summary

Analytical results were compared to the Maximum Allowable Concentrations (MACs). The laboratory analytical report is included in Appendix D for reference. All soil results achieved the MAC objectives for VOCs (and subset BTEX), PNAs, and metals, and achieved the CCDD pH requirement. Soils from the Project Area are eligible for CCDD disposal with a LPC 663 form.

#### VOCs

Eight samples were analyzed for the full VOCs list and one sample was analyzed for BTEX. VOC results were not detected above reporting limits in any of the samples analyzed. Therefore, all VOC samples analyzed achieved their MACs.

#### PNAs

Eight soil samples were analyzed for PNAs. PNAs were not detected above reporting limits in any of the samples analyzed. Therefore, all PNA samples analyzed achieved their MACs.





### Total Metals

Three soil samples were analyzed for the RCRA 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), and two were analyzed for total lead. Each metal, except cadmium and selenium, was detected above its reporting limit. All detections were below their respective MACs.

### Soil pH

The pH sampling report found in Attachment D presents the soil pH results compared to the soil pH requirement for CCDD disposal (between 6.25 and 9.0). Thirteen samples were analyzed for soil pH by H&H using a digital Hanna direct soil pH meter (HI99121). The soil pH results ranged from 6.55 to 7.55 for the samples analyzed, within the required range for CCDD disposal (6.25 to 9.0).

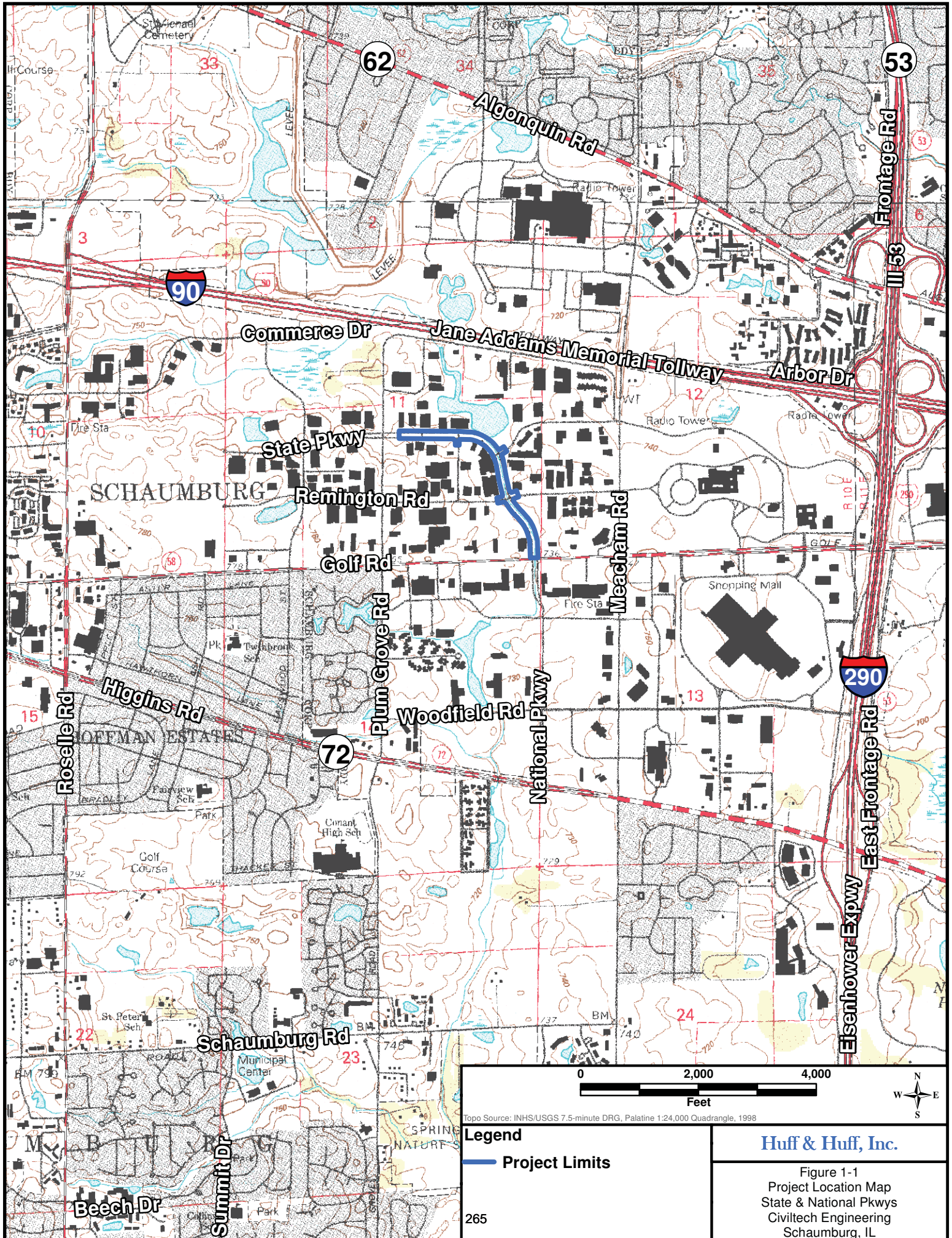
Should conditions within the project corridor differ from those encountered in the Preliminary Site Investigation, such as observed unusual staining, odors, elevated PID readings, or if loads become rejected, additional analytical assessment may be required for final disposition of spoils from this Project. If you have any questions regarding this matter, please contact us at 630-684-9100.



## ATTACHMENT A

### FIGURES





Topo Source: INHS/USGS 7.5-minute DRG, Palatine 1:24,000 Quadrangle, 1998

**Legend**

— Project Limits

**Huff & Huff, Inc.**

Figure 1-1  
 Project Location Map  
 State & National Pkwy  
 Civiltech Engineering  
 Schaumburg, IL





Site ID	Address	Status
3	1100 E Golf Road	PIP
4	1200 E Golf Road	PIP
10	1025 National Parkway	PIP
13	1020 Tower Road	PIP
16	1449 Payne Road	PIP
25	840 E State Parkway	PIP
29	711 E State Parkway	PIP

0                      500                      1,000  
Feet

N  
W — E  
S

Aerial Source: ESRI Online World Imagery

Legend	
Project Limits	PIP
Soil Boring	
Soil Boring, CCDD	

**Huff & Huff, Inc.**

Figure 2-1  
Soil Boring Location Map  
State & National Pkwy  
Civiltech Engineering  
Schaumburg, IL



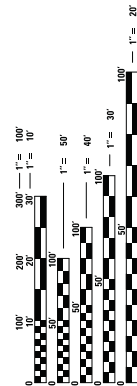
**INDEX OF SHEETS**  
FOR INDEX OF SHEETS, SEE SHEET NO. 2

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**PLANS FOR PROPOSED**  
**FEDERAL AID HIGHWAY**  
FAU ROUTE 1103 (STATE AND NATIONAL PARKWAY)  
PLUM GROVE ROAD (FAU 2582) TO  
ILLINOIS ROUTE 58 (GOLF ROAD) (FAP 0559)  
RECONSTRUCTION, DRAINAGE, LIGHTING  
SECTION 15-00119-00-PV  
PROJECT M-4003(686)  
VILLAGE OF SCHAUMBURG  
COOK COUNTY  
C-91-220-16

**DESIGN SPEED:**  
STATE/NATIONAL PARKWAY - 35 MPH  
PAYNE ROAD - 30 MPH  
TOWER ROAD - 30 MPH  
REMINGTON ROAD - 35 MPH

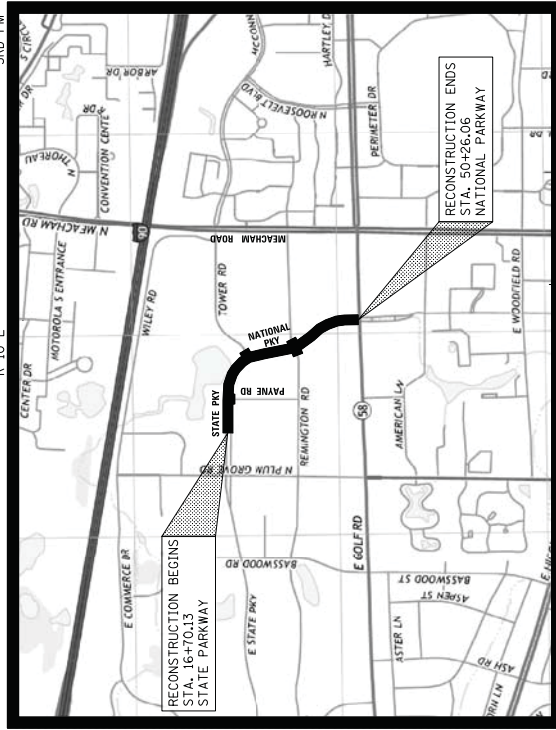
**POSTED SPEED:**  
STATE/NATIONAL PARKWAY - 30 MPH  
PAYNE ROAD - 25 MPH  
TOWER ROAD - 25 MPH  
REMINGTON ROAD - 30 MPH

**DESIGN DESIGNATIONS:**  
STATE / NATIONAL PARKWAY - 6,000 (2040) COLLECTOR  
REMINGTON ROAD - 5,000 (2040) LOCAL ROUTE



JULIE  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123 OR 811

**CONTRACT NO. XXXX**



LOCATION MAP  
NOT TO SCALE

PROJECT LENGTH (NET AND GROSS):  
STATE/NATIONAL PARKWAY - 3,355.93 FT. (1.0636 MILE)



SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
EXPIRES 11-30-2017



SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
EXPIRES 11-30-2017

FAU RUE	SECTION 15-00119-00-PV	COUNTY ILLINOIS	TOTAL SHEET NO.
ILLINOIS FED. ROAD DIST. NO. 1	COOK	CONTRACT NO. XXXXX	



LOCATION OF SECTION INDICATED THIS: -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

APPROVED \_\_\_\_\_ 20  
VILLAGE OF SCHAUMBURG DIRECTOR OF ENGINEERING AND PUBLIC WORKS

PASSED \_\_\_\_\_ 20  
DISTRICT ONE ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID  
BASED ON REVISION REVIEW \_\_\_\_\_ 20  
RESIDUAL ENGINEER

**PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS**



SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
EXPIRES 11-30-2017



Two Pierce Place, Suite 1400 - Itasca, Illinois 60143  
Tel: 630.773.3800 - Fax: 630.773.3875  
www.civiltechinc.com

SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
EXPIRES 11-30-2017

SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
EXPIRES 11-30-2017

SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
EXPIRES 11-30-2017

SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
EXPIRES 11-30-2017

SIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
EXPIRES 11-30-2017



**ATTACHMENT B**

**PHOTO LOG**

<p><b>Client Name:</b> Civiltech Engineering, Inc.</p>	<p><b>Site Location:</b> State and National Pkways, Cook County, IL</p>	<p><b>Project No.</b> 81.0220092.23</p>
<p><b>Photo 1</b> Boring B-2</p> 	<p><b>Photo 2</b> Boring B-6</p> 	<p><b>Photo 3</b> Boring B-8 Location (foreground)</p> 
<p><b>Photo 4</b> Boring B-13</p> 		

## 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<sub>mb</sub> = 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

## COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

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 working day contracts the payment will be made according to Article 109.04. For completion date contracts, an adjustment will be determined as follows.

Extended Traffic Control occurs between April 1 and November 30:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times (\% / 100 \times \text{CUP} / \text{OCT})$$

Extended Traffic Control occurs between December 1 and March 31:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times 1.5 (\% / 100 \times \text{CUP} / \text{OCT})$$

Where: TE = Duration of approved time extension in calendar days.

% = Percent maintenance for the traffic control, % (see table below).

CUP = Contract unit price for the traffic control pay item in place during the delay.

OCT = Original contract time in calendar days.

Original Contract Amount	Percent Maintenance
Up to \$2,000,000	65%
\$2,000,000 to \$10,000,000	75%
\$10,000,000 to \$20,000,000	85%
Over \$20,000,000	90%

When an ETCP adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

## CONCRETE END SECTIONS FOR PIPE CULVERTS (BDE)

Effective: January 1, 2013

Revised: April 1, 2016

**Description.** This work shall consist of constructing cast-in-place concrete and precast concrete end sections for pipe culverts. These end sections are shown on the plans as Highway Standard 542001 or 542011. This work shall be according to Section 542 of the Standard Specifications except as modified herein.

**Materials.** Materials shall be according to the following Articles of Division 1000 – Materials of the Standard Specifications.

Item	Article/Section
(a) Portland Cement Concrete (Note 1) .....	1020
(b) Precast Concrete End Sections (Note 2)	
(c) Coarse Aggregate (Note 3) .....	1004.05
(d) Structural Steel (Note 4) .....	1006.04
(e) Anchor Bolts and Rods (Note 5) .....	1006.09
(f) Reinforcement Bars .....	1006.10(a)
(g) Nonshrink Grout .....	1024.02
(h) Chemical Adhesive Resin System .....	1027
(i) Mastic Joint Sealer for Pipe .....	1055
(j) Hand Hole Plugs .....	1042.16

Note 1. Cast-in-place concrete end sections shall be Class SI, except the 14 day mix design shall have a compressive strength of 5000 psi (34,500 kPa) or a flexural strength of (800 psi) 5500 kPa and a minimum cement factor of 6.65 cwt/cu yd (395 kg/cu m).

Note 2. Precast concrete end sections shall be according to Articles 1042.02 and 1042.03(b)(c)(d)(e) of the Standard Specifications. The concrete shall be Class PC according to Section 1020, and shall have a minimum compressive strength of 5000 psi (34,000 kPa) at 28 days.

Joints between precast sections shall be produced with reinforced tongue and groove ends according to the requirements of ASTM C 1577.

Note 3. The granular bedding placed below a precast concrete end section shall be gradation CA 6, CA 9, CA 10, CA 12, CA 17, CA 18, or CA 19.

Note 4. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable.

Note 5. The anchor rods for the culvert ties shall be according to the requirements of ASTM F 1554, Grade 105 (Grade 725).

## CONSTRUCTION REQUIREMENTS

The concrete end sections may be precast or cast-in-place construction. Toe walls shall be either precast or cast-in-place, and shall be in proper position and backfilled according to the applicable paragraphs of Article 502.10 of the Standard Specifications prior to the installation of the concrete end sections. If soil conditions permit, cast-in-place toe walls may be poured directly against the soil. When poured directly against the soil, the clear cover of the sides and bottom of the toe wall shall be increased to 3 in. (75 mm) by increasing the thickness of the toe wall.

- (a) Cast-In-Place Concrete End Sections. Cast-in-place concrete end sections shall be constructed according to the requirements of Section 503 of the Standard Specifications and as shown on the plans.
- (b) Precast Concrete End Sections. When the concrete end sections will be precast, shop drawings detailing the slab thickness and reinforcement layout shall be submitted to the Engineer for review and approval.

The excavation and backfilling for precast concrete end sections shall be according to the requirements of Section 502 of the Standard Specifications, except a layer of granular bedding at least 6 in. (150 mm) in thickness shall be placed below the elevation of the bottom of the end section. The granular bedding shall extend a minimum of 2 ft (600 mm) beyond each side of the end section.

Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 2/3 turn on one of the nuts. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut.

When individual, precast end sections are placed side-by-side for a multi-pipe culvert installation, a 3 in. (75 mm) space shall be left between adjacent end section walls and the space(s) filled with Class Sl concrete.

Method of Measurement. This work will be measured for payment as each, with each end of each culvert being one each.

Basis of Payment. This work will be paid for at the contract unit price per each for CONCRETE END SECTION, STANDARD 542001 or CONCRETE END SECTION, 542011, of the pipe diameter and slope specified.

80311

## 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: January 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 that 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 that 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 that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 21.00 % 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 that enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents that 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 required prior to the award of the contract and failure of the low bidder to comply will render the bid not responsive.

- (a) The low 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, within five calendar days after the date of the letting. To meet the five-day requirement, the bidder must submit the required forms as a single .pdf file using the Department's "Vendor Portal".

The Department will not accept the 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. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan submitted by the low bidder is approved. All information submitted by the bidder must be complete, accurate and adequately document that 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. The Utilization Plan will not be approved by the Department if the Utilization Plan does not document sufficient DBE participation to meet the contract goal unless the apparent successful bidder documented in the Utilization Plan that it made a good faith effort to meet the goal. This means that 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 that 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 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 prime 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 subsection (c)(6) of 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 that the apparent successful 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 that it is otherwise eligible for award. If the

Department determines that 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 shall include a statement of reasons for the 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 in order to cure the deficiency.

- (c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217) 785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The determination shall become final if a request is not made and delivered. 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 forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order 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 prime 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 submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.
- (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, then a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that 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 DBE subcontracts to IDOT 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) That 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) That the DBE is aware that 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) That 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 prime contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the prime 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) You have determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice 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 prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime 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 shall 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 thirty 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 that 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.

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## **DISPOSAL FEES (BDE)**

Effective: November 1, 2018

Replace Articles 109.04(b)(5) – 109.04(b)(8) of the Standard Specifications with the following:

- “(5) Disposal Fees. When the extra work performed includes paying for disposal fees at a clean construction and demolition debris facility, an uncontaminated soil fill operation or a landfill, the Contractor shall receive, as administrative costs, an amount equal to five percent of the first \$10,000 and one percent of any amount over \$10,000 of the total approved costs of such fees.
- (6) Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.
- (7) Statements. No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with itemized statements of the cost of such force account work. Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor’s stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

Itemized statements at the cost of force account work shall be detailed as follows.

- a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman. Payrolls shall be submitted to substantiate actual wages paid if so requested by the Engineer.
  - b. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
  - c. Quantities of materials, prices and extensions.
  - d. Transportation of materials.
  - e. Cost of property damage, liability and workmen’s compensation insurance premiums, unemployment insurance contributions, and social security tax.
- (8) Work Performed by an Approved Subcontractor. When extra work is performed by an approved subcontractor, the Contractor shall receive, as administrative costs, an amount equal to five percent of the total approved costs of such work with the minimum payment being \$100.

- (9) All statements of the cost of force account work shall be furnished to the Engineer not later than 60 days after receipt of the Central Bureau of Construction form "Extra Work Daily Report". If the statement is not received within the specified time frame, all demands for payment for the extra work are waived and the Department is released from any and all such demands. It is the responsibility of the Contractor to ensure that all statements are received within the specified time regardless of the manner or method of delivery."

80402

## **EQUIPMENT PARKING AND STORAGE (BDE)**

Effective: November 1, 2017

Replace the first paragraph of Article 701.11 of the Standard Specifications with the following.

**“701.11 Equipment Parking and Storage.** During working hours, all vehicles and/or nonoperating equipment which are parked, two hours or less, shall be parked at least 8 ft (2.5 m) from the open traffic lane. For other periods of time during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored as follows.

- (a) When the project has adequate right-of-way, vehicles, materials, and equipment shall be located a minimum of 30 ft (9 m) from the pavement.
- (b) When adequate right-of-way does not exist, vehicles, materials, and equipment shall be located a minimum of 15 ft (4.5 m) from the edge of any pavement open to traffic.
- (c) Behind temporary concrete barrier, vehicles, materials, and equipment shall be located a minimum of 24 in. (600 mm) behind free standing barrier or a minimum of 6 in. (150 mm) behind barrier that is either pinned or restrained according to Article 704.04. The 24 in. or 6 in. measurement shall be from the base of the non-traffic side of the barrier.
- (d) Behind other man-made or natural barriers meeting the approval of the Engineer.”

80388

## **FUEL COST ADJUSTMENT (BDE)**

Effective: April 1, 2009

Revised: August 1, 2017

Description. Fuel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in fuel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any category of work will make that category of work exempt from fuel cost adjustment.

General. The fuel cost adjustment shall apply to contract pay items as grouped by category. The adjustment shall only apply to those categories of work checked "Yes", and only when the cumulative plan quantities for a category exceed the required threshold. Adjustments to work items in a category, either up or down, and extra work paid for by agreed unit price will be subject to fuel cost adjustment only when the category representing the added work was subject to the fuel cost adjustment. Extra work paid for at a lump sum price or by force account will not be subject to fuel cost adjustment. Category descriptions and thresholds for application and the fuel usage factors which are applicable to each are as follows:

### (a) Categories of Work.

- (1) Category A: Earthwork. Contract pay items performed under Sections 202, 204, and 206 including any modified standard or nonstandard items where the character of the work to be performed is considered earthwork. The cumulative total of all applicable item plan quantities shall exceed 25,000 cu yd (20,000 cu m). Included in the fuel usage factor is a weighted average 0.10 gal/cu yd (0.50 liters/cu m) factor for trucking.
- (2) Category B: Subbases and Aggregate Base Courses. Contract pay items constructed under Sections 311, 312 and 351 including any modified standard or nonstandard items where the character of the work to be performed is considered construction of a subbase or aggregate, stabilized or modified base course. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is a 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (3) Category C: Hot-Mix Asphalt (HMA) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 355, 406, 407 and 482 including any modified standard or nonstandard items where the character of the work to be performed is considered HMA bases, pavements and shoulders. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (4) Category D: Portland Cement Concrete (PCC) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 353, 420, 421 and 483 including any

modified standard or nonstandard items where the character of the work to be performed is considered PCC base, pavement or shoulder. The cumulative total of all applicable item plan quantities shall exceed 7500 sq yd (6000 sq m). Included in the fuel usage factor is 1.20 gal/cu yd (5.94 liters/cu m) factor for trucking.

- (5) Category E: Structures. Structure items having a cumulative bid price that exceeds \$250,000 for pay items constructed under Sections 502, 503, 504, 505, 512, 516 and 540 including any modified standard or nonstandard items where the character of the work to be performed is considered structure work when similar to that performed under these sections and not included in categories A through D.

(b) Fuel Usage Factors.

English Units		
Category	Factor	Units
A - Earthwork	0.34	gal / cu yd
B - Subbase and Aggregate Base courses	0.62	gal / ton
C - HMA Bases, Pavements and Shoulders	1.05	gal / ton
D - PCC Bases, Pavements and Shoulders	2.53	gal / cu yd
E - Structures	8.00	gal / \$1000

Metric Units		
Category	Factor	Units
A - Earthwork	1.68	liters / cu m
B - Subbase and Aggregate Base courses	2.58	liters / metric ton
C - HMA Bases, Pavements and Shoulders	4.37	liters / metric ton
D - PCC Bases, Pavements and Shoulders	12.52	liters / cu m
E - Structures	30.28	liters / \$1000

(c) Quantity Conversion Factors.

Category	Conversion	Factor
B	sq yd to ton	0.057 ton / sq yd / in depth
	sq m to metric ton	0.00243 metric ton / sq m / mm depth
C	sq yd to ton	0.056 ton / sq yd / in depth
	sq m to metric ton	0.00239 m ton / sq m / mm depth
D	sq yd to cu yd	0.028 cu yd / sq yd / in depth
	sq m to cu m	0.001 cu m / sq m / mm depth

Method of Adjustment. Fuel cost adjustments will be computed as follows.

$$CA = (FPI_P - FPI_L) \times FUF \times Q$$



Where: CA = Cost Adjustment, \$  
FPI<sub>P</sub> = Fuel Price Index, as published by the Department for the month the work is performed, \$/gal (\$/liter)  
FPI<sub>L</sub> = Fuel Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/gal (\$/liter)  
FUF = Fuel Usage Factor in the pay item(s) being adjusted  
Q = Authorized construction Quantity, tons (metric tons) or cu yd (cu m)

The entire FUF indicated in paragraph (b) will be used regardless of use of trucking to perform the work.

Basis of Payment. Fuel cost adjustments may be positive or negative but will only be made when there is a difference between the FPI<sub>L</sub> and FPI<sub>P</sub> in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(FPI_L - FPI_P) \div FPI_L\} \times 100$$

Fuel cost adjustments will be calculated for each calendar month in which applicable work is performed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

80229

## HOT-MIX ASPHALT - DENSITY TESTING OF LONGITUDINAL JOINTS (BDE)

Effective: January 1, 2010

Revised: August 1, 2018

Description. This work shall consist of testing the density of longitudinal joints as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications except as follows.

Quality Control/Quality Assurance (QC/QA). Delete the second and third sentence of the third paragraph of Article 1030.05(d)(3) of the Standard Specifications.

Add the following paragraphs to the end of Article 1030.05(d)(3) of the Standard Specifications:

“Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge. (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement.) Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

- a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.
- b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced 10 ft (3 m) apart longitudinally along the unconfined pavement edge and centered at the random density test location.

When a longitudinal joint sealant (LJS) is applied, longitudinal joint density testing will not be required on the joint(s) sealed.”

Revise the Density Control Limits table in Article 1030.05(d)(4) of the Standard Specifications to read:

“Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density Minimum
IL-4.75	Ndesign = 50	93.0 – 97.4% <sup>1/</sup>	91.0%
IL-9.5	Ndesign = 90	92.0 – 96.0%	90.0%
IL-9.5,IL-9.5L	Ndesign < 90	92.5 – 97.4%	90.0%
IL-19.0	Ndesign = 90	93.0 – 96.0%	90.0%
IL-19.0, IL-19.0L	Ndesign < 90	93.0 <sup>2/</sup> – 97.4%	90.0%

SMA	Ndesign = 50 & 80	93.5 – 97.4%	91.0%”
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80246

## HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT (BDE)

Effective: August 1, 2018

Revised: January 1, 2019

Add the following to Article 406.02 of the Standard Specifications.

“(d) Longitudinal Joint Sealant (LJS) .....1032”

Add the following to Article 406.03 of the Standard Specifications.

“(k) Longitudinal Joint Sealant (LJS) Pressure Distributor (Note 2)

(l) Longitudinal Joint Sealant (LJS) Melter Kettle (Note 3)

Note 2. When a pressure distributor is used to apply the LJS, the distributor shall be equipped with a heating and recirculating system along with a functioning auger agitating system or vertical shaft mixer in the hauling tank to prevent localized overheating. The distributor shall be equipped with a guide or laser system to aid in proper placement of the LJS application.

Note 3. When a melter kettle is used to transport and apply the LJS, the melter kettle shall be an oil jacketed double-boiler with agitating and recirculating systems. Material from the kettle may be dispensed through a pressure feed wand with an applicator shoe or through a pressure feed wand into a hand-operated thermal push cart.”

Revise Article 406.06(g)(2) of the Standard Specifications to read:

“(2) Longitudinal Joints. Unless prohibited by stage construction, any HMA lift shall be complete before construction of the subsequent lift. The longitudinal joint in all lifts shall be at the centerline of the pavement if the roadway comprises two lanes in width, or at lane width if the roadway is more than two lanes in width.

When stage construction prohibits the total completion of a particular lift, the longitudinal joint in one lift shall be offset from the longitudinal joint in the preceding lift by not less than 3 in. (75 mm). The longitudinal joint in the surface course shall be at the centerline of the pavement if the roadway comprises two lanes in width, or at lane width if the roadway is more than two lanes in width.

A notched wedge longitudinal joint shall be used between successive passes of HMA binder course that has a difference in elevation of greater than 2 in. (50 mm) between lanes on pavement that is open to traffic.

The notched wedge longitudinal joint shall consist of a 1 to 1 1/2 in. (25 to 38 mm) vertical notch at the lane line, a 9 to 12 in. (230 to 300 mm) wide uniform taper sloped toward and extending into the open lane, and a second 1 to 1 1/2 in. (25 to 38 mm) vertical notch at the outside edge.

The notched wedge longitudinal joint shall be formed by the strike off device on the paver. The wedge shall then be compacted by the joint roller.

Tack coat shall be applied to the entire surface of the notched wedge joint immediately prior to placing the adjacent lift of binder. The material shall be uniformly applied at a rate of 0.05 to 0.1 gal/sq yd (0.2 to 0.5 L/sq m).

When the use of LJS is specified, it shall be applied for the lift(s) of paving as shown on the plans. The surface to which the LJS is applied shall be dry and cleaned of all dust, debris, and any substances that will prevent the LJS from adhering. Cleaning shall be accomplished by means of a sweeper/vacuum truck, power broom, air compressor or by hand. The LJS may be placed before or after the tack or prime coat. When placed after the tack or prime coat, the tack or prime shall be fully cured prior to placement of the LJS.

The LJS shall be centered  $\pm 2$  in. ( $\pm 50$  mm) under the joint of the next HMA lift to be constructed.

The width and minimum application rate of LJS shall be according to the following table.

LJS Application Table		
Overlay Thickness in. (mm)	LJS Width in. (mm)	Application Rate <sup>1/</sup> lb/ft (kg/m)
HMA Mixtures		
3/4 (19)	18 (450)	0.88 (1.31)
1 (25)	18 (450)	1.15 (1.71)
1 1/4 (32)	18 (450)	1.31 (1.95)
1 1/2 (38)	18 (450)	1.47 (2.19)
1 3/4 (44)	18 (450)	1.63 (2.43)
2 (50)	18 (450)	1.80 (2.68)
2 1/4 (60)	18 (450)	1.96 (2.92)
2 1/2 (63)	18 (450)	2.12 (3.16)
2 3/4 (70)	18 (450)	2.29 (3.41)
3 (75)	18 (450)	2.45 (3.65)
3 1/4 (83)	18 (450)	2.61 (3.89)
3 1/2 (90)	18 (450)	2.78 (4.14)
3 3/4 (95)	18 (450)	2.94 (4.38)
4 (100)	18 (450)	3.10 (4.62)
SMA Mixtures		
1 1/2 (38)	18 (450)	1.26 (1.88)
1 3/4 (44)	18 (450)	1.38 (2.06)

2 (50)	18 (450)	1.51 (2.25)
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- 1/ The application rate has a surface demand for liquid included within it. 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.

The Contractor shall furnish to the Engineer a bill of lading for each tanker supplying material to the project. The application rate of LJS shall be verified within the first 1000 ft (300 m) of the day's scheduled application length and every 12,000 ft (3600 m) the remainder of the day. For projects less than 3000 ft (900 m), the rate shall be verified once. A suitable paper or pan shall be placed at a random location in the path of the LJS. After application of the LJS, the paper or pan shall be picked up, weighed, and the application rate calculated. The tolerance between the application rate shown in the LJS Application Table and the calculated rate shall be  $\pm 15$  percent. The Contractor shall replace the LJS in the area where the sample was taken.

A 1 qt (1 L) sample shall be taken from the pressure distributor or melting kettle at the jobsite once for each contract and sent to the Central Bureau of Materials.

The LJS shall be applied in a single pass with a pressure distributor, melter kettle, or hand applied from a roll for HMA lifts up to 2 in. (50 mm) in thickness. The LJS shall be applied in two passes for HMA lifts between 2 and 4 in. (50 and 100 mm) in thickness. At the time of installation, the pavement surface temperature and the ambient temperature shall be a minimum of 40 °F (4 °C) and rising.

The LJS shall be applied at a width of not less than or greater than 1 1/2 in. (38 mm) of the width specified. If the LJS flows more than 2 in. (50 mm) from the initial placement width, LJS placement shall stop and remedial action shall be taken.

When starting another run of LJS placement, suitable release paper shall be placed over the previous application of LJS to prevent doubling up of thickness of LJS.

The LJS shall be suitable for construction traffic to drive on without pickup or tracking of the LJS within 30 minutes of placement. If pickup or tracking occurs, LJS placement shall stop and damaged areas shall be repaired.

Prior to paving, the Contractor shall ensure the paver end plate and grade control device is adequately raised above the finished height of the LJS.

The LJS shall not flush to the final surface of the HMA pavement."

Add the following paragraph after the second paragraph of Article 406.13(b) of the Standard Specifications.

“Application of longitudinal joint sealant (LJS) will be measured for payment in place in feet (meters).”

Add the following paragraph after the first paragraph of Article 406.14 of the Standard Specifications.

“Longitudinal joint sealant will be paid for at the contract unit price per foot (meter) for LONGITUDINAL JOINT SEALANT.”

Add the following to Section 1032 of the Standard Specifications.

**“1032.12 Longitudinal Joint Sealant (LJS).** Longitudinal joint sealant (LJS) will be accepted according to the current Bureau of Materials and Physical Research Policy Memorandum, “Performance Graded Asphalt Binder Acceptance Procedure” with the following exceptions: Article 3.1.9 and 3.4.1.4 of the policy memorandum will be excluded. The bituminous material used for the LJS shall be according to the following table. Elastomers shall be added to a base asphalt and shall be either a styrene-butadiene diblock or triblock copolymer without oil extension, or a styrene-butadiene rubber. Air blown asphalt, acid modification, or other modifiers will not be allowed. LJS in the form of pre-formed rollout banding may also be used.

Test	Test Requirement	Test Method
Dynamic shear @ 88°C (unaged), G*/sin δ, kPa	1.00 min.	AASHTO T 315
Creep stiffness @ -18°C (unaged), Stiffness (S), MPa m-value	300 max. 0.300 min.	AASHTO T 313
Ash, %	1.0 – 4.0	AASHTO T 111
Elastic Recovery, 100 mm elongation, cut immediately, 25°C, %	70 min.	ASTM D 6084 (Procedure A)
Separation of Polymer, Difference in °C of the softening point (ring and ball)	3 max.	ITP Separation of Polymer from Asphalt Binder”

80398

**HOT-MIX ASPHALT – OSCILLATORY ROLLER (BDE)**

Effective: August 1, 2018  
 Revised: November 1, 2018

Add the following to Article 406.03 of the Standard Specifications:

“(j) Oscillatory Roller ..... 1101.01”

Revise Table 1 and Note 3/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

“TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA				
	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Level Binder: (When the density requirements of Article 406.05(c) do not apply.)	P <sup>3/</sup>	--	V <sub>S</sub> , P <sup>3/</sup> , T <sub>B</sub> , T <sub>F</sub> , 3W, O <sub>T</sub>	To the satisfaction of the Engineer.
Binder and Surface <sup>1/</sup>  Level Binder <sup>1/</sup> : (When the density requirements of Article 406.05(c) apply.)	V <sub>D</sub> , P <sup>3/</sup> , T <sub>B</sub> , 3W, O <sub>T</sub> , O <sub>B</sub>	P <sup>3/</sup> , 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 Articles: 1030.05(d)(3), (d)(4), and (d)(7).
IL-4.75 and SMA <sup>4/5/</sup>	T <sub>B</sub> , 3W, O <sub>T</sub>	--	T <sub>F</sub> , 3W, O <sub>T</sub>	
Bridge Decks <sup>2/</sup>	T <sub>B</sub>	--	T <sub>F</sub>	As specified in Articles 582.05 and 582.06.

3/ A vibratory roller (V<sub>D</sub>) or oscillatory roller (O<sub>T</sub> or O<sub>B</sub>) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder.”

Add the following to EQUIPMENT DEFINITION in Article 406.07(a) contained in the Errata of the Supplemental Specifications:

“O<sub>T</sub> - Oscillatory roller, tangential impact mode. Maximum speed is 3.0 mph (4.8 km/h) or 264 ft/min (80 m/min).

O<sub>B</sub> - Oscillatory roller, tangential and vertical impact mode, operated at a speed to produce not less than 10 vertical impacts/ft (30 impacts/m).”



Add the following to Article 1101.01 of the Standard Specifications:

“(h) Oscillatory Roller. The oscillatory roller shall be self-propelled and provide a smooth operation when starting, stopping, or reversing directions. The oscillatory roller shall be able to operate in a mode that will provide tangential impact force with or without vertical impact force by using at least one drum. The oscillatory roller shall be equipped with water tanks and sprinkling devices, or other approved methods, which shall be used to wet the drums to prevent material pickup. The drum(s) amplitude and frequency of the tangential and vertical impact force shall be approximately the same in each direction and meet the following requirements:

- (1) The minimum diameter of the drum(s) shall be 42 in. (1070 mm)48 in. (1200 mm);
- (2) The minimum length of the drum(s) shall be 57 in. (1480 mm)66 in. (1650 mm);
- (3) The minimum unit static force on the drum(s) shall be 125 lb/in. (22 N/m); and
- (4) The minimum force on the oscillatory drum shall be 18,000 lb (80 kN).”; and
- (5) Self-adjusting eccentrics, and reversible eccentrics on non-driven drum(s).”

80399

## **HOT-MIX ASPHALT – TACK COAT (BDE)**

Effective: November 1, 2016

Revise Article 1032.06(a) of the Standard Specifications to read:

“(a) Anionic Emulsified Asphalt. Anionic emulsified asphalts shall be according to AASHTO M 140. SS-1h emulsions used as a tack coat shall have the cement mixing test waived.”

80376

## LIGHTS ON BARRICADES (BDE)

Effective: January 1, 2018

Revise Article 701.16 of the Standard Specifications to read:

**“701.16 Lights.** Lights shall be used on devices as required in the plans, the traffic control plan, and the following table.

Circumstance	Lights Required
Daylight operations	None
First two warning signs on each approach to the work involving a nighttime lane closure and “ROUGH GROOVED SURFACE” (W8-I107) signs	Flashing mono-directional lights
Devices delineating isolated obstacles, excavations, or hazards at night (Does not apply to patching)	Flashing bi-directional lights
Devices delineating obstacles, excavations, or hazards exceeding 100 ft (30 m) in length at night (Does not apply to widening)	Steady burn bi-directional lights
Channelizing devices for nighttime lane closures on two-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads separating opposing directions of traffic	None
Channelizing devices for nighttime along lane shifts on multilane roads	Steady burn mono-directional lights
Channelizing devices for night time along lane shifts on two lane roads	Steady burn bi-directional lights
Devices in nighttime lane closure tapers on Standards 701316 and 701321	Steady burn bi-directional lights
Devices in nighttime lane closure tapers	Steady burn mono-directional lights
Devices delineating a widening trench	None
Devices delineating patches at night on roadways with an ADT less than 25,000	None
Devices delineating patches at night on roadways with an ADT of 25,000 or more	None

Batteries for the lights shall be replaced on a group basis at such times as may be specified by the Engineer.”

Delete the fourth sentence of the first paragraph of Article 701.17(c)(2) of the Standard Specifications.

Revise the first paragraph of Article 603.07 of the Standard Specifications to read:

**“603.07 Protection Under Traffic.** After the casting has been adjusted and Class SI concrete has been placed, the work shall be protected by a barricade for at least 72 hours.”

80392

**MANHOLES, VALVE VAULTS, AND FLAT SLAB TOPS (BDE)**

Effective: January 1, 2018

Revised: January 1, 2019

Description. In addition to those manufactured according to the current standards included in this contract, manholes, valve vaults, and flat slab tops manufactured prior to January 1, 2019, according to the previous Highway Standards listed below will be accepted on this contract:

<u>Product</u>	<u>Previous Standards</u>
Precast Manhole Type A, 4' (1.22 m) Diameter	602401-04 or 602401-03
Precast Manhole Type A, 5' (1.52 m) Diameter	602402 or 602401-03
Precast Manhole Type A, 6' (1.83 m) Diameter	602406-08 or 602406-07
Precast Manhole Type A, 7' (2.13 m) Diameter	602411-06 or 602411-05
Precast Manhole Type A, 8' (2.44 m) Diameter	602416-06 or 602416-05
Precast Manhole Type A, 9' (2.74 m) Diameter	602421-06 or 602421-05
Precast Manhole Type A, 10' (3.05 m) Diameter	602426
Precast Valve Vault Type A, 4' (1.22 m) Diameter	602501-03 or 602501-02
Precast Valve Vault Type A, 5' (1.52 m) Diameter	602506 or 602501-02
Precast Reinforced Concrete Flat Slab Top	602601-05 or 602601-04

The following revisions to the Standard Specifications shall apply to manholes, valve vaults, and flat slab tops manufactured according to the current standards included in this contract:

Revise Article 602.02(g) of the Standard Specifications to read:

“(g) Structural Steel (Note 4) .....1006.04

Note 4. All components of the manhole joint splice shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable.”

Add the following to Article 602.02 of the Standard Specifications:

“(s) Anchor Bolts and Rods (Note 5) .....1006.09

Note 5. The threaded rods for the manhole joint splice shall be according to the requirements of ASTM F 1554, Grade 55, (Grade 380).”

Revise the second paragraph of Article 1042.10 of the Standard Specifications to read:

“Catch basin Types A, B, C, and D; Manhole Type A; Inlet Types A and B; Drainage Structures Types 1, 2, 3, 4, 5, and 6; Valve Vault Type A; and reinforced concrete flat slab top (Highway Standard 602601) shall be according to AASHTO M 199 (M 199M), except the minimum wall thickness shall be as shown on the plans. Additionally, catch basins, inlets, and drainage structures shall have a minimum concrete compressive strength of 4500 psi

(31,000 kPa) at 28 days and manholes, valve vaults, and reinforced concrete flat slab tops shall have a minimum concrete compressive strength of 5000 psi (34,500 kPa) at 28 days.”

80393

**PAVEMENT MARKING REMOVAL (BDE)**

Effective: July 1, 2016

Revise Article 783.02 of the Standard Specifications to read:

**“783.02 Equipment.** Equipment shall be according to the following.

Item	Article/Section
(a) Grinders (Note 1)	
(b) Water Blaster with Vacuum Recovery .....	1101.12

Note 1. Grinding equipment shall be approved by the Engineer.”

Revise the first paragraph of Article 783.03 of the Standard Specifications to read:

**“783.03 Removal of Conflicting Markings.** Existing pavement markings that conflict with revised traffic patterns shall be removed. If darkness or inclement weather prohibits the removal operations, such operations shall be resumed the next morning or when weather permits. In the event of removal equipment failure, such equipment shall be repaired, replaced, or leased so removal operations can be resumed within 24 hours.”

Revise the first and second sentences of the first paragraph of Article 783.03(a) of the Standard Specifications to read:

“The existing pavement markings shall be removed by the method specified and in a manner that does not materially damage the surface or texture of the pavement or surfacing. Small particles of tightly adhering existing markings may remain in place, if in the opinion of the Engineer, complete removal of the small particles will result in pavement surface damage.”

Revise the first paragraph of Article 783.04 of the Standard Specifications to read:

**“783.04 Cleaning.** The roadway surface shall be cleaned of debris or any other deleterious material by the use of compressed air or water blast.”

Revise the first paragraph of Article 783.06 of the Standard Specifications to read:

**“783.06 Basis of Payment.** This work will be paid for at the contract unit price per each for RAISED REFLECTIVE PAVEMENT MARKER REMOVAL, or at the contract unit price per square foot (square meter) for PAVEMENT MARKING REMOVAL – GRINDING and/or PAVEMENT MARKING REMOVAL – WATER BLASTING.”

Delete Article 1101.13 from the Standard Specifications.

80371

## **PAYMENTS TO SUBCONTRACTORS (BDE)**

Effective: November 2, 2017

Add the following to the end of the fourth paragraph of Article 109.11 of the Standard Specifications:

“If reasonable cause is asserted, written notice shall be provided to the applicable subcontractor and/or material supplier and the Engineer within five days of the Contractor receiving payment. The written notice shall identify the contract number, the subcontract or material purchase agreement, a detailed reason for refusal, the value of payment being withheld, and the specific remedial actions required of the subcontractor and/or material supplier so that payment can be made.”

80390



**PORTLAND CEMENT CONCRETE (BDE)**

Effective: November 1, 2017

Revise the Air Content % of Class PP Concrete in Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

"TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA		
Class of Conc.	Use	Air Content %
PP	Pavement Patching Bridge Deck Patching (10)	
	PP-1	4.0 - 8.0"
	PP-2	
	PP-3	
	PP-4	
	PP-5	

Revise Note (4) at the end of Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

“(4) For all classes of concrete, the maximum slump may be increased to 7 in (175 mm) when a high range water-reducing admixture is used. For Class SC, the maximum slump may be increased to 8 in. (200 mm). For Class PS, the maximum slump may be increased to 8 1/2 in. (215 mm) if the high range water-reducing admixture is the polycarboxylate type.”

80389

## **PROGRESS PAYMENTS (BDE)**

Effective: November 2, 2013

Revise Article 109.07(a) of the Standard Specifications to read:

“(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the quantity of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1000.00 will be approved for payment other than the final payment.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics' Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610), progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved.”

80328

## **STEEL COST ADJUSTMENT (BDE)**

Effective: April 2, 2004

Revised: August 1, 2017

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

- Metal Piling (excluding temporary sheet piling)
- Structural Steel
- Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of \$10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.
- (b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars  
Q = quantity of steel incorporated into the work, in lb (kg)  
D = price factor, in dollars per lb (kg)

$$D = MPI_M - MPI_L$$

Where:  $MPI_M$  = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

$MPI_L$  = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price,. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the  $MPI_M$  will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the  $MPI_L$  and  $MPI_M$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

**Attachment**

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling) Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness) Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness) Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness) Other piling	23 lb/ft (34 kg/m) 32 lb/ft (48 kg/m) 37 lb/ft (55 kg/m) See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Mesh Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail Steel Plate Beam Guardrail, Type A w/steel posts Steel Plate Beam Guardrail, Type B w/steel posts Steel Plate Beam Guardrail, Types A and B w/wood posts Steel Plate Beam Guardrail, Type 2 Steel Plate Beam Guardrail, Type 6 Traffic Barrier Terminal, Type 1 Special (Tangent) Traffic Barrier Terminal, Type 1 Special (Flared)	20 lb/ft (30 kg/m) 30 lb/ft (45 kg/m) 8 lb/ft (12 kg/m) 305 lb (140 kg) each 1260 lb (570 kg) each 730 lb (330 kg) each 410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms Traffic Signal Post Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 - 12 m) Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 - 16.5 m) Light Pole w/Mast Arm, 30 - 50 ft (9 - 15.2 m) Light Pole w/Mast Arm, 55 - 60 ft (16.5 - 18 m) Light Tower w/Luminaire Mount, 80 - 110 ft (24 - 33.5 m) Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 - 42.5 m) Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 - 48.5 m)	11 lb/ft (16 kg/m) 14 lb/ft (21 kg/m) 21 lb/ft (31 kg/m) 13 lb/ft (19 kg/m) 19 lb/ft (28 kg/m) 31 lb/ft (46 kg/m) 65 lb/ft (97 kg/m) 80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence) Steel Railing, Type SM Steel Railing, Type S-1 Steel Railing, Type T-1 Steel Bridge Rail	64 lb/ft (95 kg/m) 39 lb/ft (58 kg/m) 53 lb/ft (79 kg/m) 52 lb/ft (77 kg/m)
Frames and Grates Frame Lids and Grates	250 lb (115 kg) 150 lb (70 kg)

80127

## **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 MOBILILATION PAYMENTS (BDE)**

Effective: November 2, 2017

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

“This mobilization payment shall be made at least 14 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

**TEMPORARY PAVEMENT MARKING (BDE)**

Effective: April 1, 2012

Revised: April 1, 2017

Revise Article 703.02 of the Standard Specifications to read:

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

- (a) Pavement Marking Tape, Type I and Type III ..... 1095.06
- (b) Paint Pavement Markings ..... 1095.02
- (c) Pavement Marking Tape, Type IV ..... 1095.11”

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

“Type I marking tape or paint shall be used at the option of the Contractor, except paint shall not be applied to the final wearing surface unless authorized by the Engineer for late season applications where tape adhesion would be a problem. Type III or Type IV marking tape shall be used on the final wearing surface when the temporary pavement marking will conflict with the permanent pavement marking such as on tapers, crossovers and lane shifts.”

Revise Article 703.07 of the Standard Specifications to read:

**“703.07 Basis of Payment.** This work will be paid for as follows.

- a) Short Term Pavement Marking. Short term pavement marking will be paid for at the contract unit price per foot (meter) for SHORT TERM PAVEMENT MARKING. Removal of short term pavement markings will be paid for at the contract unit price per square foot (square meter) for SHORT TERM PAVEMENT MARKING REMOVAL.
- b) Temporary Pavement Marking. Where the Contractor has the option of material type, temporary pavement marking will be paid for at the contract unit price per foot (meter) for TEMPORARY PAVEMENT MARKING of the line width specified, and at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS.

Where the Department specifies the use of pavement marking tape, the Type III or Type IV temporary pavement marking will be paid for at the contract unit price per foot (meter) for PAVEMENT MARKING TAPE, TYPE III or PAVEMENT MARKING TAPE, TYPE IV of the line width specified and at the contract unit price per square feet (square meter) for PAVEMENT MARKING TAPE, TYPE III - LETTERS AND SYMBOLS or PAVEMENT MARKING TAPE, TYPE IV – LETTERS AND SYMBOLS.

Removal of temporary pavement markings will be paid for at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING REMOVAL.



When temporary pavement marking is shown on the Standard, the cost of the temporary pavement marking and its removal will be included in the cost of the Standard.”

Add the following to Section 1095 of the Standard Specifications:

**“1095.11 Pavement Marking Tape, Type IV.** The temporary, preformed, patterned markings shall consist of a white or yellow tape with wet retroreflective media incorporated to provide immediate and continuing retroreflection during both wet and dry conditions. The tape shall be manufactured without the use of heavy metals including lead chromate pigments or other similar, lead-containing chemicals.

The white and yellow Type IV marking tape shall meet the Type III requirements of Article 1095.06 and the following.

- (a) Composition. The retroreflective pliant polymer pavement markings shall consist of a mixture of high-quality polymeric materials, pigments and glass beads distributed throughout its base cross-sectional area, with a layer of wet retroreflective media bonded to a durable polyurethane topcoat surface. The patterned surface shall have approximately 40% ± 10% of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed beads or particles.
- (b) Retroreflectance. The white and yellow markings shall meet the following for initial dry and wet retroreflectance.
  - (1) Dry Retroreflectance. Dry retroreflectance shall be measured under dry conditions according to ASTM D 4061 and meet the values described in Article 1095.06 for Type III tape.
  - (2) Wet Retroreflectance. Wet retroreflectance shall be measured under wet conditions according to ASTM E 2177 and meet the values shown in the following table.

**Wet Retroreflectance, Initial R<sub>L</sub>**

<b>Color</b>	<b>R<sub>L</sub> 1.05/88.76</b>
White	300
Yellow	200

- (c) Color. The material shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and a two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

<b>Color</b>	<b>Daylight Reflectance %Y</b>
White	65 minimum
*Yellow	36-59

\*Shall match Federal 595 Color No. 33538 and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

- (d) Skid Resistance. The surface of the markings shall provide an average minimum skid resistance of 50 BPN when tested according to ASTM E 303.
- (e) Sampling, Testing, Acceptance, and Certification. Prior to approval and use of the wet reflective, temporary, removable pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, and date of manufacture.

After approval by the Department, samples and certification by the manufacturer shall be submitted for each batch used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, manufacturer's name, and date of manufacture.

All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer."

80298

**TRAINING SPECIAL PROVISIONS (BDE)** 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 1 . In the event the contractor subcontracts a portion of the contract work, he 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 insure 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 employed by him 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 that he 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 has successfully completed a training course leading to journeyman status or in which he 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, Manpower Administration, Bureau of Apprenticeship and Training 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 will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

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

## **TRAFFIC CONTROL DEVICES - CONES (BDE)**

Effective: January 1, 2019

Revise Article 701.15(a) of the Standard Specifications to read:

“(a) Cones. Cones are used to channelize traffic. Cones used to channelize traffic at night shall be reflectorized; however, cones shall not be used in nighttime lane closure tapers or nighttime lane shifts.”

Revise Article 1106.02(b) of the Standard Specifications to read:

“(b) Cones. Cones shall be predominantly orange. Cones used at night that are 28 to 36 in. (700 to 900 mm) in height shall have two white circumferential stripes. If non-reflective spaces are left between the stripes, the spaces shall be no more than 2 in. (50mm) in width. Cones used at night that are taller than 36 in. (900 mm) shall have a minimum of two white and two fluorescent orange alternating, circumferential stripes with the top stripe being fluorescent orange. If non-reflective spaces are left between the stripes, the spaces shall be no more than 3 in. (75 mm) in width.

The minimum weights for the various cone heights shall be 4 lb for 18 in. (2 kg for 450 mm), 7 lb for 28 in. (3 kg for 700 mm), and 10 lb for 36 in. (5 kg for 900 mm) with a minimum of 60 percent of the total weight in the base. Cones taller than 36 in. shall be weighted per the manufacturer’s specifications such that they are not moved by wind or passing traffic.”

80409

**TRAVERSABLE PIPE GRATE FOR CONCRETE END SECTIONS (BDE)**

Effective: January 1, 2013

Revised: January 1, 2018

Description. This work shall consist of constructing a traversable pipe grate on a concrete end section.

Materials. Materials shall be according to the following Articles of Division 1000 – Materials of the Standard Specifications.

Item	Article/Section
(a) Traversable Pipe Grate Components (Note 1)	
(b) Chemical Adhesive Resin System .....	1027
(c) High Strength Steel Bolts, Nuts, and Washers (Note 2).....	1006.08

Note 1. All steel pipe shall be according to ASTM A 53 (Type E or S), Grade B, or ASTM A 500 Grade B, standard weight (SCH. 40). Structural steel shapes and plates shall be according to AASHTO M270 Grade 50 (M 270M Grade 345) and the requirements of Article 1006.04 of the Standard Specifications. All steel components of the grating system shall be galvanized according to AASHTO M 111 or ASTM F 2329 as applicable.

Anchor rods shall be according to ASTM F 1554, Grade 36 (Grade 250).

Note 2. Threaded rods conforming to the requirements of ASTM F 1554, Grade 105 (Grade 725) may be used for the thru bolts.

**CONSTRUCTION REQUIREMENTS**

Fabrication of the traversable pipe grate shall be according to the requirements of Section 505 of the Standard Specifications and as shown on the plans.

Anchor rods shall be set according to Article 509.06 of the Standard Specifications. Bolts and anchor rods shall be snug tightened by a few impacts of an impact wrench or the full force of a worker using an ordinary spud wrench. Thru bolts shall be snug tightened and shall be brought to a snug tight condition followed by an additional 2/3 turn on one of the nuts. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut.

Splicing of pipes shall be made by utilizing full penetration butt welds according to Article 505.04(q) of the Standard Specifications. In lieu of welding, bolted or sleeve type splices may be utilized, provided the splices are located over intermediate supports with no more than one splice per pipe run with the exception that no splice may occur in pipe runs under 30 ft (9 m) in length.

Method of Measurement. This work will be measured for payment in place in feet (meters). The length measured shall be along the pipe grate elements from end to end for both longitudinal and intermediate support pipes.

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for  
| TRAVERSABLE PIPE GRATE FOR CONCRETE END SECTION.

80318



## WARM MIX ASPHALT (BDE)

Effective: January 1, 2012

Revised: April 1, 2016

Description. This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

### Equipment.

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

**"1102.01 Hot-Mix Asphalt Plant.** The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, "Approval of Hot-Mix Asphalt Plants and Equipment". Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements."

Add the following to Article 1102.01(a) of the Standard Specifications.

"(11) Equipment for Warm Mix Technologies.

- a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of  $\pm 2$  percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.

- b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes."

#### Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

"(e) Warm Mix Technologies.

- (1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.
- (2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification."

#### Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

"The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C).  
WMA shall be delivered at a minimum temperature of 215 °F (102 °C)."

#### Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

80288

## **WEEKLY DBE TRUCKING REPORTS (BDE)**

Effective: June 2, 2012

| Revised: April 2, 2015

| 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 Monday through Sunday 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

## STRUCTURAL REPAIR OF CONCRETE

Effective: March 15, 2006

Revised: April 1, 2016

Description. This work shall consist of structurally repairing concrete.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement Concrete (Note 1) .....	1020
(b) R1 or R2 Concrete (Note 2)	
(c) Normal Weight Concrete (Notes 3 and 4)	
(d) Shotcrete (High Performance) (Notes 5 and 6)	
(e) Reinforcement Bars .....	1006.10
(f) Anchor Bolts .....	1006.09
(g) Water .....	1002
(h) Curing Compound .....	1022.01
(i) Cotton Mats .....	1022.02
(j) Protective Coat .....	1023.01
(k) Epoxy (Note 7) .....	1025
(l) Mechanical Bar Splicers .....	508.06(c)

Note 1. The concrete shall be Class SI, except the cement factor shall be a minimum 6.65 cwt/cu yd (395 kg/cu m), the coarse aggregate shall be a CA 16, and the strength shall be a minimum 4000 psi (27,500 kPa) compressive or 675 psi (4650 kPa) flexural at 14 days. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, but a cement factor reduction according to Article 1020.05(b)(8) is prohibited. A self-consolidating concrete mixture is also acceptable per Article 1020.04, except the mix design requirements of this note regarding the cement factor, coarse aggregate, strength, and cement factor reduction shall apply.

Note 2. The R1 or R2 concrete shall be from the Department's approved list of Packaged, Dry, Rapid Hardening, Cementitious Materials for Concrete Repairs. The R1 or R2 concrete shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer's recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, and a retarder may be required to allow time to perform the required field tests. The admixtures shall be per the manufacturer's recommendation, and the Department's approved list of Concrete Admixtures shall not apply.

Note 3. The "high slump" packaged concrete mixture shall be from the Department's approved list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The cement

factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “high slump” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “high slump” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump. The admixture shall be per the manufacturer’s recommendation, and the Department’s approved list of Concrete Admixtures shall not apply. A maximum slump of 10 in. (250 mm) may be permitted if no segregation is observed by the Engineer in a laboratory or field evaluation.

Note 4 The “self-consolidating concrete” packaged concrete mixture shall be from the Department’s approved list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The cement factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “self-consolidating concrete” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “self-consolidating concrete” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The concrete mixture should be uniformly graded, and the coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used. The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. The admixtures used to produce self-consolidating concrete shall be per the manufacturer’s recommendation, and the Department’s approved list of Concrete Admixtures shall not apply. The packaged concrete mixture shall meet the self-consolidating requirements of Article 1020.04.

Note 5. Packaged shotcrete that includes aggregate shall be from the Department’s approved list of Packaged High Performance Shotcrete, and independent

laboratory test results showing the product meets Department specifications will be required. The product shall be a packaged, pre-blended, and dry combination of materials, for the wet-mix shotcrete method according to ASTM C 1480. A non-chloride accelerator may be used according to the shotcrete manufacturer's recommendations. The shotcrete shall be Type FA or CA, Grade FR, and Class I. The fibers shall be Type III synthetic according to ASTM C 1116.

The packaged shotcrete shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the hardened shotcrete shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department.

Each individual aggregate used in the packaged shotcrete shall have either a maximum ASTM C 1260 expansion of 0.16 percent or a maximum ASTM C 1293 expansion of 0.040 percent. However, the ASTM C 1260 value may be increased to 0.27 percent for each individual aggregate if the cement total equivalent alkali content ( $\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$ ) does not exceed 0.60 percent. As an alternative to these requirements, ASTM C 1567 testing which shows the packaged shotcrete has a maximum expansion of 0.16 percent may be submitted. The ASTM C 1260, C 1293, or C 1567 test shall be performed a minimum of once every two years.

The 7 and 28 day compressive strength requirements in ASTM C 1480 shall not apply. Instead the shotcrete shall obtain a minimum compressive strength of 4000 psi (27,500 kPa) at 14 days.

The packaged shotcrete shall be limited to the following proportions:

The portland cement and finely divided minerals shall be 6.05 cwt/cu yd (360 kg/cu m) to 8.50 cwt/cu yd (505 kg/cu m) for Type FA and 6.05 cwt/cu yd (360 kg/cu. m) to 7.50 cwt/cu yd (445 kg/cu m) for Type CA. The portland cement shall not be below 4.70 cwt/cu yd (279 kg/cu m) for Type FA or CA.

The finely divided mineral(s) shall constitute a maximum of 35 percent of the total cement plus finely divided mineral(s).

Class F fly ash is optional and the maximum shall be 20 percent by weight (mass) of cement.

Class C fly ash is optional and the maximum shall be 25 percent by weight (mass) of cement.

Ground granulated blast-furnace slag is optional and the maximum shall be 30 percent by weight (mass) of cement.

Microsilica is required and shall be a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent. As an alternative to microsilica, high-reactivity metakaolin may be used at a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent.

Fly ash shall not be used in combination with ground granulated blast-furnace slag. Class F fly ash shall not be used in combination with Class C fly ash. Microsilica shall not be used in combination with high-reactivity metakaolin. A finely divided mineral shall not be used in combination with a blended hydraulic cement, except for microsilica or high-reactivity metakaolin.

The water/cement ratio as defined in Article 1020.06 shall be a maximum of 0.42.

The air content as shot shall be 4.0 – 8.0 percent.

Note 6 Packaged shotcrete that does not include pre-blended aggregate shall be from the Department's approved list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The shotcrete shall be according to Note 5, except the added aggregate shall be according to Articles 1003.02 and 1004.02 in addition to each individual aggregate meeting the maximum expansion requirements of Note 5. The aggregate gradation shall be according to the manufacturer. The shotcrete shall be batched and mixed with added aggregate according to the manufacturer.

Note 7. In addition ASTM C 881, Type IV, Grade 2 or 3, Class A, B, or C may be used.

Equipment. Equipment shall be according to Article 503.03 and the following.

Chipping Hammer – The chipping hammer for removing concrete shall be a light-duty pneumatic or electric tool with a 15 lb. (7 kg) maximum class or less.

Blast Cleaning Equipment – Blast cleaning equipment for concrete surface preparation shall be the abrasive type, and the equipment shall have oil traps.

Hydrodemolition Equipment – Hydrodemolition equipment for removing concrete shall be calibrated, and shall use water according to Section 1002.

High Performance Shotcrete Equipment – The batching, mixing, pumping, hose, nozzle, and auxiliary equipment shall be for the wet-mix shotcrete method, and shall meet the requirements of ACI 506R.

### Construction Requirements

General. The repair methods shall be either formed concrete repair or shotcrete. The repair method shall be selected by the Contractor with the following rules.

- (a) Rule 1. For formed concrete repair, a subsequent patch to repair the placement point after initial concrete placement will not be allowed. As an example, this may occur in a vertical location located at the top of the repair.
- (b) Rule 2. Formed concrete repair shall not be used for overhead applications.
- (c) Rule 3. If formed concrete repair is used for locations that have reinforcement with less than 0.75 in. (19 mm) of concrete cover, the concrete mixture shall contain fly ash or ground granulated blast-furnace slag at the maximum cement replacement allowed.
- (d) Rule 4. Shotcrete shall not be used for any repair greater than 6 in. (150 mm) in depth, except in horizontal applications, where the shotcrete may be placed from above in one lift.
- (e) Rule 5. Shotcrete shall not be used for column repairs greater than 4 in. (100 mm) in depth, unless the shotcrete mixture contains 3/8 in. (9.5 mm) aggregate.

Temporary Shoring or Cribbing. When a temporary shoring or cribbing support system is required, the Contractor shall provide details and computations, prepared and sealed by an Illinois licensed Structural Engineer, to the Department for review and approval. When ever possible the support system shall be installed prior to starting the associated concrete removal. If no system is specified, but during the course of removal the need for temporary shoring or cribbing becomes apparent or is directed by the Engineer due to a structural concern, the Contractor shall not proceed with any further removal work until an appropriate and approved support system is installed.

Concrete Removal. The Contractor shall provide ladders or other appropriate equipment for the Engineer to mark the removal areas. Repair configurations will be kept simple, and squared corners will be preferred. The repair perimeter shall be sawed a depth of 1/2 in. (13 mm) or less, as required to avoid cutting the reinforcement. Any cut reinforcement shall be repaired or replaced at the expense of the Contractor. If the concrete is broken or removed beyond the limits of the initial saw cut, the new repair perimeter shall be recut. The areas to be repaired shall have all loose, unsound concrete removed completely by the use of chipping hammers, hydrodemolition equipment, or other methods approved by the Engineer. The concrete removal shall extend along the reinforcement bar until the reinforcement is free of bond inhibiting corrosion. Reinforcement bar with 50 percent or more exposed shall be undercut to a depth of 3/4 in. (19 mm) or the diameter of the reinforcement bar, whichever is greater.

If sound concrete is encountered before existing reinforcement bars are exposed, further removal of concrete shall not be performed unless the minimum repair depth is not met.



The repair depth shall be a minimum of 1 in. (25 mm). The substrate profile shall be  $\pm 1/16$  in. ( $\pm 1.5$  mm). The perimeter of the repair area shall have a vertical face.

If a repair is located at the ground line, any excavation required below the ground line to complete the repair shall be included in this work.

The Contractor shall have a maximum of 14 calendar days to complete each repair location with concrete or shotcrete, once concrete removal has started for the repair.

The Engineer shall be notified of concrete removal that exceeds 6 in. (150 mm) in depth, one fourth the cross section of a structural member, more than half the vertical column reinforcement is exposed in a cross section, more than 6 consecutive reinforcement bars are exposed in any direction, within 1.5 in. (38 mm) of a bearing area, or other structural concern. Excessive deterioration or removal may require further evaluation of the structure or installation of temporary shoring and cribbing support system.

Surface Preparation. Prior to placing the concrete or shotcrete, the Contractor shall prepare the repair area and exposed reinforcement by blast cleaning. The blast cleaning shall provide a surface that is free of oil, dirt, and loose material.

If a succeeding layer of shotcrete is to be applied, the initial shotcrete surface and remaining exposed reinforcement shall be free of curing compound, oil, dirt, loose material, rebound (i.e. shotcrete material leaner than the original mixture which ricochets off the receiving surface), and overspray. Preparation may be by lightly brushing or blast cleaning if the previous shotcrete surface is less than 36 hours old. If more than 36 hours old, the surface shall be prepared by blast cleaning.

The repair area and perimeter vertical face shall have a rough surface. Care shall be taken to ensure the sawcut face is roughened by blast cleaning. Just prior to concrete or shotcrete placement, saturate the repair area with water to a saturated surface-dry condition. Any standing water shall be removed.

Concrete or shotcrete placement shall be done within 3 calendar days of the surface preparation or the repair area shall be prepared again.

Reinforcement. Exposed reinforcement bars shall be cleaned of concrete and corrosion by blast cleaning. After cleaning, all exposed reinforcement shall be carefully evaluated to determine if replacement or additional reinforcement bars are required.

Reinforcing bars that have been cut or have lost 25 percent or more of their original cross sectional area shall be supplemented by new in kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical bar splicer shall be used when it is not feasible to provide the minimum bar lap. No welding of bars shall be performed.

Intersecting reinforcement bars shall be tightly secured to each other using 0.006 in. (1.6 mm) or heavier gauge tie wire, and shall be adequately supported to minimize movement during concrete placement or application of shotcrete.

For reinforcement bar locations with less than 0.75 in. (19 mm) of cover, protective coat shall be applied to the completed repair. The application of the protective coat shall be according to Article 503.19, 2nd paragraph, except blast cleaning shall be performed to remove curing compound.

The Contractor shall anchor the new concrete to the existing concrete with 3/4 in. (19 mm) diameter hook bolts for all repair areas where the depth of concrete removal is greater than 8 in. (205 mm) and there is no existing reinforcement extending into the repair area. The hook bolts shall be spaced at 15 in. (380 mm) maximum centers both vertically and horizontally, and shall be a minimum of 12 in. (305 mm) away from the perimeter of the repair. The hook bolts shall be installed according to Section 584.

Repair Methods. All repair areas shall be inspected and approved by the Engineer prior to placement of the concrete or application of the shotcrete.

- (a) Formed Concrete Repair. Falsework shall be according to Article 503.05. Forms shall be according to Article 503.06. Formwork shall provide a smooth and uniform concrete finish, and shall approximately match the existing concrete structure. Formwork shall be mortar tight and closely fitted where they adjoin the existing concrete surface to prevent leakage. Air vents may be provided to reduce voids and improve surface appearance. The Contractor may use exterior mechanical vibration, as approved by the Engineer, to release air pockets that may be entrapped.

The concrete for formed concrete repair shall be a Class SI Concrete, or a packaged R1 or R2 Concrete with coarse aggregate added, or a packaged Normal Weight Concrete at the Contractor's option. The concrete shall be placed and consolidated according to Article 503.07. The concrete shall not be placed when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40 °F (4 °C). All repaired members shall be restored as close as practicable to their original dimensions.

Curing shall be done according to Article 1020.13.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period.

The surfaces of the completed repair shall be finished according to Article 503.15.

- (b) Shotcrete. Shotcrete shall be tested by the Engineer for air content according to Illinois Modified AASHTO T 152. The sample shall be obtained from the discharge end of the nozzle by shooting a pile large enough to scoop a representative amount for filling the air meter measuring bowl. Shotcrete shall not be shot directly into the measuring bowl for testing.

For compressive strength of shotcrete, a 18 x 18 x 3.5 in. (457 x 457 x 89 mm) test panel shall be shot by the Contractor for testing by the Engineer. A steel form test panel shall have a minimum thickness of 3/16 in. (5 mm) for the bottom and sides. A wood form test panel shall have a minimum 3/4 in. (19 mm) thick bottom, and a minimum 1.5 in. (38 mm) thickness for the sides. The test panel shall be cured according to Article 1020.13 (a) (3) or (5) while stored at the jobsite and during delivery to the laboratory. After delivery to the laboratory for testing, curing and testing shall be according to ASTM C 1140.

The method of alignment control (i.e. ground wires, guide strips, depth gages, depth probes, and formwork) to ensure the specified shotcrete thickness and reinforcing bar cover is obtained shall be according to ACI 506R. Ground wires shall be removed after completion of cutting operations. Guide strips and formwork shall be of dimensions and a configuration that do not prevent proper application of shotcrete. Metal depth gauges shall be cut 1/4 in. (6 mm) below the finished surface. All repaired members shall be restored as close as practicable to their original dimensions.

For air temperature limits when applying shotcrete in cold weather, the first paragraph of Article 1020.14(b) shall apply. For hot weather, shotcrete shall not be applied when the air temperature is greater than 90°F (32°C). The applied shotcrete shall have a minimum temperature of 50°F (10°C) and a maximum temperature of 90°F (32°C). The shotcrete shall not be applied during periods of rain unless protective covers or enclosures are installed. The shotcrete shall not be applied when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40°F (4°C). If necessary, lighting shall be provided to provide a clear view of the shooting area.

The shotcrete shall be applied according to ACI 506R, and shall be done in a manner that does not result in cold joints, laminations, sandy areas, voids, sags, or separations. In addition, the shotcrete shall be applied in a manner that results in maximum densification of the shotcrete. Shotcrete which is identified as being unacceptable while still plastic shall be removed and re-applied.

The nozzle shall normally be at a distance of 2 to 5 ft. (0.6 to 1.5 m) from the receiving surface, and shall be oriented at right angles to the receiving surface. Exceptions to this requirement will be permitted to fill corners, encase large diameter reinforcing bars, or as approved by the Engineer. For any exception, the nozzle shall never be oriented more than 45 degrees from the surface. Care shall be taken to keep the front face of the reinforcement bar clean during shooting operations. Shotcrete shall be built up from behind the reinforcement bar. Accumulations of rebound and overspray shall be continuously removed prior to application of new shotcrete. Rebound material shall not be incorporated in the work.

Whenever possible, shotcrete shall be applied to the full thickness in a single layer. The maximum thickness shall be according to Rules 4 and 5 under Construction Requirements, General. When two or more layers are required, the minimum number shall be used and shall be done in a manner without sagging or separation. A flash coat (i.e. a thin layer of up to 1/4 in. (6 mm) applied shotcrete) may be used as the final lift for overhead applications.

Prior to application of a succeeding layer of shotcrete, the initial layer of shotcrete shall be prepared according to the surface preparation and reinforcement bar cleaning requirements. Upon completion of the surface preparation and reinforcement bar treatment, water shall be applied according to the surface preparation requirements unless the surface is moist. The second layer of shotcrete shall then be applied within 30 minutes.

Shotcrete shall be cut back to line and grade using trowels, cutting rods, screeds or other suitable devices. The shotcrete shall be allowed to stiffen sufficiently before cutting. Cutting shall not cause cracks or delaminations in the shotcrete. For depressions, cut material may be used for small areas. Rebound material shall not be incorporated in the work. For the final finish, a wood float shall be used to approximately match the existing concrete texture. A manufacturer approved finishing aid may be used. Water shall not be used as a finishing aid. All repaired members shall be restored as close as practicable to their original dimensions.

Contractor operations for curing shall be continuous with shotcrete placement and finishing operations. Curing shall be accomplished using wetted cotton mats, membrane curing, or a combination of both. Cotton mats shall be applied according to Article 1020.13(a)(5) except the exposed layer of shotcrete shall be covered within 10 minutes after finishing, and wet curing shall begin immediately. Curing compound shall be applied according to Article 1020.13(a)(4), except the curing compound shall be applied as soon as the shotcrete has hardened sufficiently to prevent marring the surface, and each of the two separate applications shall be applied in opposite directions to ensure coverage. The curing compound shall be according to Article 1022.01. Note 5 of the Index Table in Article 1020.13 shall apply to the membrane curing method.

When a shotcrete layer is to be covered by a succeeding shotcrete layer within 36 hours, the repair area shall be protected with intermittent hand fogging, or wet curing with either

burlap or cotton mats shall begin within 10 minutes. Intermittent hand fogging may be used only for the first hour. Thereafter, wet curing with burlap or cotton mats shall be used until the succeeding shotcrete layer is applied. Intermittent hand fogging may be extended to the first hour and a half if the succeeding shotcrete layer is applied by the end of this time.

The curing period shall be for 7 days, except when there is a succeeding layer of shotcrete. In this instance, the initial shotcrete layer shall be cured until the surface preparation and reinforcement bar treatment is started.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period

Inspection of Completed Work. The Contractor shall provide ladders or other appropriate equipment for the Engineer to inspect the repaired areas. After curing but no sooner than 28 days after placement of concrete or shooting of shotcrete, the repair shall be examined for conformance with original dimensions, cracks, voids, and delaminations. Sounding for delaminations will be done with a hammer or by other methods determined by the Engineer.

The acceptable tolerance for conformance of a repaired area shall be within 1/4 in. (6 mm) of the original dimensions. A repaired area not in dimensional conformance or with delaminations shall be removed and replaced.

A repaired area with cracks or voids shall be considered as nonconforming. Exceeding one or more of the following crack and void criteria shall be cause for removal and replacement of a repaired area.

1. The presence of a single surface crack greater than 0.01 in. (0.25 mm) in width and greater than 12 in. (300 mm) in length.
2. The presence of two or more surface cracks greater than 0.01 in. (0.25 mm) in width that total greater than 24 in. (600 mm) in length.
3. The presence of map cracking in one or more regions totaling 15 percent or more of the gross surface area of the repair.
4. The presence of two or more surface voids with least dimension 3/4 in. (19 mm) each.

A repaired area with cracks or voids that do not exceed any of the above criteria may remain in place, as determined by the Engineer.

If a nonconforming repair is allowed to remain in place, cracks greater than 0.007 in. (0.2 mm) in width shall be repaired with epoxy according to Section 590. For cracks less than or equal to

0.007 in. (0.2 mm) in width, the epoxy may be applied to the surface of the crack. Voids shall be repaired according to Article 503.15.

Publications and Personnel Requirements. The Contractor shall provide a current copy of ACI 506R to the Engineer a minimum of one week prior to start of construction.

The shotcrete personnel who perform the work shall have current American Concrete Institute (ACI) nozzle men certification for vertical wet and overhead wet applications, except one individual may be in training. This individual shall be adequately supervised by a certified ACI nozzle men as determined by the Engineer. A copy of the nozzle men certificate(s) shall be given to the Engineer.

Method of Measurement. This work will be measured for payment in place and the area computed in square feet (square meters). For a repair at a corner, both sides will be measured.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 IN. (125 MM)), STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 IN. (125 MM)).

When not specified to be paid for elsewhere, the work to design, install, and remove the temporary shoring and cribbing will be paid for according to Article 109.04.

With the exception of reinforcement damaged by the Contractor during removal, the furnishing and installation of supplemental reinforcement bars, mechanical bar splicers, hook bolts, and protective coat will be paid according to Article 109.04.

**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated 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. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

**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 (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).

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.

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). 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 bid proposal or request for proposal 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).

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.

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. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

**II. NONDISCRIMINATION**

The provisions of this section related to 23 CFR Part 230 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 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, 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 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, 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 230, 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 (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 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 35 and 29 CFR 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.

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, 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 who 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.

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, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure 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. 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, 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, 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 there under. 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, 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 and 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. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor 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 contracting agency deems appropriate.

**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 \$10,000 or more.

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, 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). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

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**

a. All laborers and mechanics employed or working upon the site of the work, 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 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.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. 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 shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). 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 classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall 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. (1) The contracting officer shall 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 shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore 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 utilized 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) 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 shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. 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.

(3) 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 shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour 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.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall 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.

c. 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 shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. 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, 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.

## 2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, 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.

## 3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, 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 section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) 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 section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall 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. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee ( e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed 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 Regulations, 29 CFR part 3;

(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 of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, 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 may be grounds for debarment action pursuant to 29 CFR 5.12.

#### 4. Apprentices and trainees

##### a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed 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 Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall 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 the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall 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, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

##### b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

##### d. 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. 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 journeymen 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.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 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.

**9. Disputes concerning labor standards.** 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 he or she) 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 section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

### **V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

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 watchmen 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.

**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. 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 watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 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.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or 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, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

### **VI. SUBLETTING OR ASSIGNING THE CONTRACT**

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

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" 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:

(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.

2. 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. 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.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

## **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 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.

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 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).

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 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 1, 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**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

## **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.

### **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.

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.

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.

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 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee 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 grantee or subgrantee 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.

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.

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. 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 Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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. 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) 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;

(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; 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.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

## **2. 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)

a. By signing and submitting this proposal, the prospective lower tier 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.

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 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 grantee or subgrantee 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 grantee or subgrantee 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.

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.

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 Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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.

\* \* \* \* \*

#### **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall 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 20).

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.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS**

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.



## Contract Provision - Cargo Preference Requirements

In accordance with Title 46 CFR § 381.7 (b), the contractor 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.

(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 Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.”

Provisions (1) and (2) apply to materials or equipment that are acquired solely for the project. The two provisions do not apply to goods or materials that come into inventories independent of the project, such as shipments of Portland cement, asphalt cement, or aggregates, when industry suppliers and contractors use these materials to replenish existing inventories.

**MINIMUM WAGES FOR FEDERAL AND FEDERALLY  
ASSISTED CONSTRUCTION CONTRACTS**

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.