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Letting September 20, 2024

Notice to Bidders, Specifications and Proposal



**Contract No. 61K60
COOK County
Section 19-00285-00-RS (Evanston)
Route FAU 2744 (Green Bay Road)
Project IKT1-871 ()
District 1 Construction Funds**

Prepared by

F

Checked by

(Printed by authority of the State of Illinois)



- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. September 20, 2024 at which time the bids will be publicly opened from the iCX SecureVault.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 61K60
COOK County
Section 19-00285-00-RS (Evanston)
Project IKT1-871 ()
Route FAU 2744 (Green Bay Road)
District 1 Construction Funds**

HMA Resurfacing with ADA Ramps, lighting, streetscape improvements, and traffic signal modernization on Green Bay Road from Prairie Avenue to Poplar Avenue in Evanston.

- 3. INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.
- 4. AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to re-advertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Omer Osman,
Secretary

CONTRACT 61K60

**INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS**

Adopted January 1, 2024

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 1-1-22) (Revised 1-1-24)

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BDE SPECIAL PROVISIONS

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

<u>File Name</u>	<u>Pg.</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80099		<input type="checkbox"/> Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2022
80274	246	<input checked="" type="checkbox"/> Aggregate Subgrade Improvement	April 1, 2012	April 1, 2022
80192		<input type="checkbox"/> Automated Flagger Assistance Device	Jan. 1, 2008	April 1, 2023
80173		<input type="checkbox"/> Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80426		<input type="checkbox"/> Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	Jan. 1, 2022
80241		<input type="checkbox"/> Bridge Demolition Debris	July 1, 2009	
50531		<input type="checkbox"/> Building Removal	Sept. 1, 1990	Aug. 1, 2022
50261		<input type="checkbox"/> Building Removal with Asbestos Abatement	Sept. 1, 1990	Aug. 1, 2022
80449	249	<input checked="" type="checkbox"/> Cement, Type II	Aug. 1, 2023	
80384	250	<input checked="" type="checkbox"/> Compensable Delay Costs	June 2, 2017	April 1, 2019
80198		<input type="checkbox"/> Completion Date (via calendar days)	April 1, 2008	
80199		<input type="checkbox"/> Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80453		<input type="checkbox"/> Concrete Sealer	Nov. 1, 2023	
80261	254	<input checked="" type="checkbox"/> Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
80434		<input type="checkbox"/> Corrugated Plastic Pipe (Culvert and Storm Sewer)	Jan. 1, 2021	
80029	257	<input checked="" type="checkbox"/> Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
80229		<input type="checkbox"/> Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
80452		<input type="checkbox"/> Full Lane Sealant Waterproofing System	Nov. 1, 2023	
80447		<input type="checkbox"/> Grading and Shaping Ditches	Jan 1, 2023	
80433		<input type="checkbox"/> Green Preformed Thermoplastic Pavement Markings	Jan. 1, 2021	Jan. 1, 2022
80443		<input type="checkbox"/> High Tension Cable Median Barrier Removal	April 1, 2022	
80456	267	<input checked="" type="checkbox"/> Hot-Mix Asphalt	Jan. 1, 2024	
80446	268	<input checked="" type="checkbox"/> Hot-Mix Asphalt – Longitudinal Joint Sealant	Nov. 1, 2022	Aug. 1, 2023
80438		<input type="checkbox"/> Illinois Works Apprenticeship Initiative – State Funded Contracts	June 2, 2021	April 2, 2024
80045		<input type="checkbox"/> Material Transfer Device	June 15, 1999	Jan. 1, 2022
80450		<input type="checkbox"/> Mechanically Stabilized Earth Retaining Walls	Aug. 1, 2023	
80441	270	<input checked="" type="checkbox"/> Performance Graded Asphalt Binder	Jan 1, 2023	
80451	275	<input checked="" type="checkbox"/> Portland Cement Concrete	Aug. 1, 2023	
* 80459		<input type="checkbox"/> Preformed Plastic Pavement Marking	June 2, 2024	
34261		<input type="checkbox"/> Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2022
80455	276	<input checked="" type="checkbox"/> Removal and Disposal of Regulated Substances	Jan. 1, 2024	April 1, 2024
80445	278	<input checked="" type="checkbox"/> Seeding	Nov. 1, 2022	
* 80457	284	<input checked="" type="checkbox"/> Short Term and Temporary Pavement Markings	April 1, 2024	April 2, 2024
80448	288	<input checked="" type="checkbox"/> Source of Supply and Quality Requirements	Jan. 2, 2023	
80340		<input type="checkbox"/> Speed Display Trailer	April 2, 2014	Jan. 1, 2022
80127		<input type="checkbox"/> Steel Cost Adjustment	April 2, 2014	Jan. 1, 2022
80397	289	<input checked="" type="checkbox"/> Subcontractor and DBE Payment Reporting	April 2, 2018	
80391	290	<input checked="" type="checkbox"/> Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
80437	291	<input checked="" type="checkbox"/> Submission of Payroll Records	April 1, 2021	Nov. 2, 2023
80435		<input type="checkbox"/> Surface Testing of Pavements – IRI	Jan. 1, 2021	Jan. 1, 2023
80410		<input type="checkbox"/> Traffic Spotters	Jan. 1, 2019	
20338	293	<input checked="" type="checkbox"/> Training Special Provisions	Oct. 15, 1975	Sept. 2, 2021
80429		<input type="checkbox"/> Ultra-Thin Bonded Wearing Course	April 1, 2020	Jan. 1, 2022
80439	296	<input checked="" type="checkbox"/> Vehicle and Equipment Warning Lights	Nov. 1, 2021	Nov. 1, 2022
* 80458		<input type="checkbox"/> Waterproofing Membrane System	Aug. 1, 2024	
80302	297	<input checked="" type="checkbox"/> Weekly DBE Trucking Reports	June 2, 2012	Nov. 1, 2021
80454		<input type="checkbox"/> Wood Sign Support	Nov. 1, 2023	
80427	298	<input checked="" type="checkbox"/> Work Zone Traffic Control Devices	Mar. 2, 2020	
80071		<input type="checkbox"/> Working Days	Jan. 1, 2002	

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1 2022, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of Contract 61K60, Project IKT1(871), Section 19-00285-00-RS, Green Bay Road, Cook County and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

Green Bay Road
Section 19-00285-00-RS
Project IKT1(871)
Cook County
Contract 61K60

LOCATION OF PROJECT

The project extends along Green Bay Road in Cook County from McCormick Boulevard to Isabella Street. The improvements are located within the City of Evanston and cover 0.84 miles along Green Bay Road, and Central Street from Prairie Avenue to Poplar Avenue/Broadway Avenue.

Gross Length = 4,425 ft. = 0.84 miles
Net Length = 4,425 ft. = 0.84 miles

DESCRIPTION OF PROJECT

The scope of work generally consists of roadway removal and resurfacing. Additional improvements include sidewalk ramp modifications at signalized intersections for compliance with the Americans with Disabilities ACT (ADA), roadway lighting, streetscape and landscaping improvements, traffic signal modernization, traffic signal interconnection, the addition of high visibility crosswalks, pedestrian push buttons, and pedestrian countdown signals, as well as all incidental and collateral work to construct the project as shown on the plans and described herein. The improvements along Central Street will include water main and sewer replacement that will be locally funded.

MAINTENANCE OF ROADWAYS (D1)

Effective: September 30, 1985

Revised: November 1, 1996

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

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

STATUS OF UTILITIES (D1)

Effective: June 1, 2016

Revised: January 1, 2020

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

UTILITIES TO BE ADJUSTED

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

Pre-Stage

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
STA 1205+09.00, 14' LT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1206+01.00, 15' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 1208+87.00, 7.5' LT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1211+61.00, 10.5' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 1212+82.00, 28.5' LT	Combined Sewer	Existing structure in resurfacing limits	MWRD	60 days
STA 1213+01.00, 15' LT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1215+88.00, 12' LT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1215+95.00, 10.5' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 1218+08.00, 22' LT	Combined Sewer	Existing structure in resurfacing limits	MWRD	60 days
STA 1220+52.74	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1220+52.80	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1220+74.00, 10' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 1222+00.00	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 2413+66.00, 13' LT	Combined Sewer	Existing structure in resurfacing limits	MWRD	60 days

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
STA 2413+70.00, 1' LT	Combined Sewer	Existing structure in resurfacing limits	MWRD	60 days
STA 2413+80.00, 8' LT	Combined Sewer	Existing structure in resurfacing limits	MWRD	60 days
STA 1224+6.00, 10' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 1226+20.00, 3' RT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1226+25.00, 3' RT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1220+58.00, 10.5' LT	Combined Sewer	Existing structure in resurfacing limits	MWRD	60 days
STA 1230+46.00, 8' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 1232+20.00, 22' RT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1232+24.00, 22' RT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1235+37.00, 9' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 1235+42.00, 9' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 1236+49.00, 9' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 1238+16.00, 21' RT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1238+18.00, 9' LT	Combined Sewer	Existing manhole in resurfacing limits	MWRD	60 days
STA 1238+20.00, 21' RT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1241+79.00, 8' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days
STA 2141+81.00, 17' RT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 2411+76.00, 17' RT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 1304+60.00, 18' RT	Electricity	Existing manhole in resurfacing limits	ComEd	60 days
STA 2416+72.00, 12' RT	Telephone	Existing manhole in resurfacing limits	AT&T	60 days

Pre-Stage: 60 Days Total Installation

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

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	E-mail address
ComEd	Tim Tamason	815-477-5258	Timothy.Tamason@comed.com
AT&T	Steve Larson	-	G11629@att.com
MWRD	Hanif Munshi	312-751-3184	munshih@mwrdd.org

UTILITIES TO BE WATCHED AND PROTECTED

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

Pre-Stage

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER
STA 1204+92, 42' LT	Gas	Proposed traffic signal interconnect crosses existing underground gas line	Nicor Gas
STA 1206+99, 30' LT	Gas	Proposed lighting crosses existing underground gas line	Nicor Gas
STA 1212+78, 32' LT	Telephone	Proposed traffic signal interconnect crosses existing underground telephone line	AT&T
SW Corner of Lincoln Ave and Green Bay Road	Telephone	Proposed traffic signal conduit, foundations, and interconnect near existing underground telephone line	AT&T
SW Corner of Lincoln St and Green Bay Road	Gas	Proposed traffic signal conduit, foundations, and interconnect near existing underground gas line	Nicor Gas
SW Corner of Lincoln St and Green Bay Road	Fiber Optic	Proposed traffic signal conduit, foundations, and interconnect near existing underground fiber optic line	City of Evanston
SE Corner of Lincoln St and Green Bay Road	Fiber Optic	Proposed traffic signal conduit and foundations near existing underground fiber optic line	City of Evanston
STA 1215+45, 28' LT	Telephone	Proposed traffic signal interconnect crosses existing underground telephone line	AT&T

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER
STA 1220+34, 29' LT	Telephone	Proposed traffic signal interconnect crosses existing underground telephone line	AT&T
STA 1220+95, 29' LT	Telephone	Proposed traffic signal interconnect crosses existing underground telephone line	AT&T
SW Corner of Central St and Green Bay Road	Telephone	Proposed traffic signal conduit, foundations, and interconnect near existing underground telephone line	AT&T
STA 1223+66, 28' LT	Telephone	Proposed traffic signal interconnect crosses existing underground telephone line	AT&T
NW Corner of Livingston St and Green Bay Road	Telephone	Proposed traffic signal conduit, foundations, and interconnect near existing underground telephone line	AT&T
STA 1236+78, 32' LT	Telephone	Proposed traffic signal interconnect crosses existing underground telephone line	AT&T
STA 1211+70 to 1212+70, LT	Gas	Proposed interconnect crosses existing gas line	Nicor Gas
1211+88, LT	Telephone	Proposed interconnect crosses telephone line	AT&T
1215+15, LT	Cable	Proposed interconnect crosses existing cable line	Comcast
GBR at Central, SE corner	Electricity	Signal foundation near existing electricity line	ComEd
GBR at Livingston, SE corner	Electricity	Signal foundation near existing electricity line	ComEd
1230+ 68 LT	Telephone	Signal foundation near existing telephone line	AT&T
1241+32 LT	Telephone	Proposed interconnect crosses existing telephone line	AT&T

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

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	E-mail address
AT&T	Steve Larson	-	G11629@att.com
Nicor Gas	Charlie "Chip" Parrot	630-388-3046	gasmaps@aglresources.com
Comcast	Robert Stoll	224-229-5849	Robert_stoll2@comcast.com
ComEd	Tim Tamason	815-477-5258	Timothy.Tamason@comed.com
MWRD	Hanif Munshi	312-751-3184	munshih@mwrdd.org

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

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

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

PUBLIC CONVENIENCE AND SAFETY (D1)

Effective: May 1, 2012

Revised: July 15, 2012

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

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

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

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

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

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

COMPLETION DATE PLUS WORKING DAYS (D1)

Effective: September 30, 1985

Revised: January 1, 2007

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

"When a completion date plus working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on October 31, 2025 except as specified herein.

The Contractor will be allowed to complete all clean-up work and punch list items within 10 working days after the completion date for opening the roadway to traffic. Under extenuating circumstances the Engineer may direct that certain items of work, not affecting the safe opening of the roadway to traffic, may be completed within the working days allowed for 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 or the Special Provision for "Failure to Complete the Work on Time", if included in this contract, shall apply to both the completion date and the number of working days.

AGGREGATE SURFACE COURSE FOR TEMPORARY ACCESS (D1)

Effective: April 1, 2001

Revised: January 2, 2007

Revise Article 402.10 of the Standard Specifications to read:

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

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

- (a) Private Entrance. The minimum width shall be 12 ft (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.”

HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D1)

Effective: November 1, 2019

Revised: December 1, 2021

Revise Article 1004.03(c) to read:

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

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

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

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

“(e) Absorption. For SMA the coarse aggregate shall also have water absorption ≤ 2.0 percent.”

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

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

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

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

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

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

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

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

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with N_{design} = 90.

3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.

4/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.

5/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.

6/ When the mixture is used as a binder, the maximum shall be increased by 0.5 percent passing."

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

- (b) Volumetric Requirements. The target value for the air voids of the HMA shall be 4.0 percent, for IL-4.75 and SMA mixtures it shall be 3.5 percent and for Stabilized Subbase it shall be 3.0 percent at the design number of gyrations. The voids in the mineral aggregate (VMA) and voids filled with asphalt binder (VFA) of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the following requirements.

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

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

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

“IL-4.75 and Stone Matrix Asphalt (SMA) mixtures which contain aggregate having absorptions greater than or equal to 2.0 percent, or which contain steel slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours.”

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

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

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

	Breakdown/Intermediate Roller (one of the following)	Final Roller (one or more of the following)	Density Requirement
IL-9.5, IL-9.5FG, IL-19.0 ^{1/}	V _D , P, T _B , 3W, O _T , O _B	V _S , T _B , T _F , O _T	As specified in Section 1030
IL-4.75 and SMA _{3/4/}	T _B , 3W, O _T	T _F , 3W	As specified in Section 1030
Mixtures on Bridge Decks ^{2/}	T _B	T _F	As specified in Articles 582.05 and 582.06.

“4/ The Contractor shall provide a minimum of two steel-wheeled tandem rollers (T_B), and/or three-wheel (3W) rollers for breakdown, except one of the (T_B) or (3W) rollers shall be 84 inches (2.14 m) wide and a weight of 315 pound per linear inch (PLI) (5.63 kg/mm) and one of the (T_B) or (3W) rollers can be substituted for an oscillatory roller (O_T). T_F rollers shall be a minimum of 280 lb/in. (50 N/mm). The 3W and T_B rollers shall be operated at a uniform speed not to exceed 3 mph (5 km/h), with the drive roll for T_B rollers nearest the paver and maintain an effective rolling distance of not more than 150 ft (45 m) behind the paver.”

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

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

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

“A test strip of 300 ton (275 metric tons), except for SMA mixtures it will be 400 ton (363 metric ton), will be required for each mixture on each contract at the beginning of HMA production for each construction year according to the Manual of Test Procedures for Materials “Hot Mix Asphalt Test Strip Procedures”. At the request of the Producer, the Engineer may waive the test strip if previous construction during the current construction year has demonstrated the constructability of the mix using Department test results.”

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

“When a test strip is constructed, the Contractor shall collect and split the mixture according to the document “Hot-Mix Asphalt Test Strip Procedures”. The Engineer, or a representative, shall deliver split sample to the District Laboratory for verification testing. The Contractor shall complete mixture tests stated in Article 1030.09(a). Mixture sampled shall include enough material for the Department to conduct mixture tests detailed in Article 1030.09(a) and in the document “Hot-Mix Asphalt Mixture Design Verification Procedure” Section 3.3. The mixture test results shall meet the requirements of Articles 1030.05(b) and 1030.05(d), except Hamburg wheel tests will only be conducted on High ESAL mixtures during production.”

STORM SEWER ADJACENT TO OR CROSSING WATER MAIN (D1)

Effective: February 1, 1996

Revised: January 1, 2007

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

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

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

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

ADJUSTMENTS AND RECONSTRUCTIONS (D1)

Effective: March 15, 2011

Revised: October 1, 2021

Revise the first paragraph of Article 602.04 to read:

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

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

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

Revise Article 603.05 to read:

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

Revise Article 603.06 to read:

“603.06 Replacement of Existing Rigid Pavement. After the castings have been adjusted, the pavement and HMA that was removed, shall be replaced with Class PP-2 concrete, unless otherwise noted in the plans, not less than 9 in. (225 mm) thick. The pavement may be opened to traffic according to Article 701.17(e)(3)b.

The surface of the Class PP concrete shall be constructed flush with the adjacent surface.”

Revise the first sentence of Article 603.07 to read:

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

DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (D1)

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."

ENGINEER'S FIELD OFFICE TYPE A (D1)

Effective: January 1, 2022

Revise the first paragraph of Article 670.02 to read:

670.02 Engineer's Field Office Type A (D1). Type A (D1) field offices shall have a ceiling height of not less than 7 feet and a floor space of not less than 1000 square feet with a minimum of two separate offices. The office shall also have a separate storage room capable of being locked for the storage of the nuclear measuring devices. The office shall be provided with sufficient heat, natural and artificial light, and air conditioning. Doors and windows shall be equipped with locks approved by the Engineer.

Add the following to Article 670.07 Basis of Payment.

The building or buildings, fully equipped, will be paid for at the contract unit price per calendar month or fraction thereof for ENGINEER'S FIELD OFFICE, TYPE A (D1).

TRAFFIC CONTROL PLAN

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.

The anticipated schedule for the project is as follows:

Central Street Water Main & Sewer Installation

Schedule: March 3, 2025 - April 30, 2025

Green Bay Road & Central Street Improvements

Substantial Completion = May 1, 2025 - October 31, 2025

Construction Suspension = November 17, 2025 - January 30, 2026

Punch List = February 2, 2026 - June 27, 2026

STANDARDS:

701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701011-04	OFF-ROAD MOVING OPERATIONS, 2L, 2W, DAY ONLY
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 OPERATION, FOR SPEEDS \leq 40 MPH
701501-06	URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
701502-09	URBAN LANE CLOSURE, 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE
701602-10	URBAN LANE CLOSURE, MULTILANE, 2W WITH BIDIRECTIONAL LEFT TURN LANE
701606-10	URBAN SINGLE LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
701611-01	URBAN HALF ROAD CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
701701-10	URBAN LANE CLOSURE, MULTILANE INTERSECTION
701801-06	SIDEWALK, CORNER OR CROSSWALK CLOSURE
701901-09	TRAFFIC CONTROL DEVICES

DETAILS:

TC-10	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS AND DRIVEWAYS
TC-13	DISTRICT ONE TYPICAL PAVEMENT MARKINGS

TC-22 ARTERIAL ROAD INFORMATION SIGN
TC-26 DRIVEWAY ENTRANCE SIGNING

SPECIAL PROVISIONS:

Keeping Arterial Roadways Open To Traffic (Lane Closures Only)
Maintenance of Roadways (D1)
Public Convenience and Safety (D1)
Short Term and Temporary Pavement Markings (BDE)
Temporary Information Signing
Vehicle and Equipment Warning Lights (BDE)
Work Zone Traffic Control Devices (BDE)

FRICITION AGGREGATE (D1)

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

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

“1004.03 Coarse Aggregate for Hot-Mix Asphalt (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> ^{5/} : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA Low ESAL	Stabilized Subbase or Shoulders	<u>Allowed Alone or in Combination</u> ^{5/} : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{1/} Crushed Concrete
HMA High ESAL Low ESAL	Binder IL-19.0 or IL-19.0L SMA Binder	<u>Allowed Alone or in Combination</u> ^{5/ 6/} : Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete ^{3/}
HMA High ESAL Low ESAL	C Surface and Binder IL-9.5 IL-9.5FG or IL-9.5L	<u>Allowed Alone or in Combination</u> ^{5/} : Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/} Crushed Concrete ^{3/}

Use	Mixture	Aggregates Allowed	
HMA High ESAL	D Surface and Binder IL-9.5 or IL-9.5FG	<u>Allowed Alone or in Combination</u> ^{5/} :	
		Crushed Gravel Carbonate Crushed Stone (other than Limestone) ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/}	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		25% Limestone	Dolomite
HMA High ESAL	E Surface IL-9.5 SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> ^{5/ 6/} :	
		Crushed Gravel Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Dolomite ^{2/}	Any Mixture E aggregate
75% Dolomite ^{2/}	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone		
75% Crushed Gravel ^{2/}	Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag		

Use	Mixture	Aggregates Allowed	
HMA High ESAL	F Surface IL-9.5 SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> ^{5/ 6/} :	
		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 ^{2/} or Dolomite ^{2/}	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone

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

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

Effective: January 1, 2019
 Revised: December 1, 2021

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

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

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

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

- 1/ The compacted gyratory bricks for Hamburg wheel and I-FIT testing shall be 7.5 ± 0.5 percent air voids.
- 2/ If the Contractor does not possess the equipment to prepare the 160 mm tall brick(s), twice as many 115 mm tall compacted gyratory bricks will be acceptable.

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

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

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

“Mixture sampled during first day of production shall include approximately 60 lb (27 kg) of additional material for the Department to conduct Hamburg wheel testing and approximately 80 lb (36 kg) of additional material for the Department to conduct I-FIT testing. Within two working days after sampling, the Contractor shall deliver prepared samples to the District laboratory for verification testing. The required number and size of prepared samples submitted for the Hamburg wheel and I-FIT testing shall be according to the “High ESAL - Required Samples for Verification Testing” table in Article 1030.05(d)(3) above.”

AVAILABLE REPORTS (D1 LR)

Effective: July 1, 2021

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: _____

Those seeking these reports should request access from:

Sat Nagar, P.E.
Senior Project Manager
Capital Planning & Engineering
City of Evanston Public Works Agency
Phone: 847-866-2967
Email: snagar@cityofevanston.org

City of Evanston Public Works Agency
2100 Ridge Avenue
Evanston, IL 60201
Main Phone: 847-448-4311

COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12 (ABUTTING EXISTING PAVEMENT)

Description: This work shall consist of constructing type B-6.12 concrete curb and gutter abutting existing pavement.

Materials: The materials shall meet the requirements of Article 606.02 of the "Standard Specifications".

General: The work shall be performed according to Section 606 of the "Standard Specifications", latest IDOT Standard Drawing 606001 and the following: One inch expansion joints shall be constructed at maximum intervals of 150 feet. The end treatments as shown on the plans shall conform to the applicable special details. Where no end treatment is specified, curb and gutter endings shall be transitioned to a flat section over the final six feet. Prior to placing the curb and gutter the existing pavement shall be saw cut full depth to provide a clean edge to form the curb and gutter.

Method of Measurement: Combination Concrete Curb and Gutter, Type B-6.12 (Abutting Existing Pavement) will be measured for payment in feet. The measurement will be made along the face of curb according to Article 606.14 of the "Standard Specifications". Transitions from one type of curb and gutter to another will be included in the measured quantities for the type having the largest cross sectional area of concrete.

BASIS OF PAYMENT: This work will be paid for at the contract unit price per foot for COMBINATION CONCRETE CURB AND GUTTER, (ABUTTING EXISTING PAVEMENT) of the type specified. The unit price shall include all equipment, labor and materials required to complete the construction of the curb and gutter. Any and all excavation, saw cutting, and material removal required to construct the curb and gutter shall be included in the unit price for the COMBINATION CONCRETE CURB AND GUTTER, (ABUTTING EXISTING PAVEMENT) of the type specified.

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.”

FIBER OPTIC CABLE, SINGLE MODE

Effective: March 15, 2013

Description. The Contractor shall furnish and install loose-tube, single-mode, fiber optic cable of the number of fibers specified as shown in the plans and as directed by the Engineer.

Other ancillary components, required to complete the fiber optic cable plant, including but not limited to, moisture and water sealants, cable caps, fan-out kits, etc., shall be included in the cost of fiber optic cable and will not be paid for separately.

Materials The single-mode, fiber optic cable shall incorporate a loose, buffer-tube design. The cable shall be an accepted product of the United States Department of Agriculture Rural Utilities Service (RUS) 7 CFR 1755.900 and meet the requirements of ANSI/ICEA Standard for Fiber Optic Outside Plant Communications Cable, ANSI/ICEA S-87-640-1999 for a single sheathed, non-armored cable, and shall be new, unused and of current design and manufacture.

Fibers.

The cables shall use dispersion unshifted fibers. The optical and physical characteristics of the un-cabled fibers shall include:

The single-mode fiber shall meet EIA/TIA-492CAA, "Detail Specification for Class IVa Dispersion-Unshifted Single-Mode Optical Fibers," and ITU recommendation G.652.D, "Characteristics of a single-mode optical fiber cable."

Physical Construction			
Requirement		Units	Value
Cladding Diameter		(μm)	125.0 \pm 0.7
Core-to-Cladding Concentricity		(μm)	\leq 0.5
Cladding Non-Circularity			\leq 0.7 %
Mode Field Diameter	1310 nm	(μm)	9.2 \pm 0.4
	1550 nm		10.4 \pm 0.5
Coating Diameter		(μm)	245 \pm 5
Colored Fiber Nominal Diameter		(μm)	253 - 259
Fiber Curl radius of curvature		(m)	> 4.0 m

Optical Characteristics				
Requirement			Units	Value
Cabled Fiber Attenuation		1310 nm	(dB/km)	≤ 0.4
		1550 nm		≤ 0.3
Point discontinuity		1310 nm	(dB)	≤ 0.1
		1550 nm		≤ 0.1
Macrobend Attenuation	Turns	Mandrel OD	(dB)	
	1	32 ± 2 mm		< 0.05 at 1550 nm
	100	50 ± 2 mm		< 0.05 at 1310 nm
	100	50 ± 2 mm		< 0.10 at 1550 nm
	100	60 ± 2 mm		< 0.05 at 1550 nm
	100	60 ± 2 mm		< 0.05 at 1625 nm
Cable Cutoff Wavelength (λ_{ccf})			(nm)	< 1260
Zero Dispersion Wavelength (λ_o)			(nm)	1302 ≤ λ_o ≤ 1322
Zero Dispersion Slope (S_o)			(ps/(nm ² •km))	≤ 0.089
Total Dispersion	1550 nm		(ps/(nm•km))	≤ 3.5
	1285-1330 nm			≤ 17.5
	1625 nm			≤ 21.5
Cabled Polarization Mode Dispersion			(ps/km ²)	≤ 0.2
IEEE 802.3 GbE - 1300 nm Laser Distance			(m)	up to 5000
Water Peak Attenuation: 1383 ± 3 nm			(dB/km)	≤ 0.4

Cable Construction.

The number of fibers in each cable shall be as specified on the plans.

Optical fibers shall be placed inside a loose buffer tube. The nominal outer diameter of the buffer tube shall be 3.0 mm. Each buffer tube shall contain up to 12 fibers. The fibers shall not adhere to the inside of the buffer tube.

Each fiber shall be distinguishable by means of color coding in accordance with TIA/EIA-598-B, "Optical Fiber Cable Color Coding." The fibers shall be colored with ultraviolet (UV) curable inks.

Buffer tubes containing fibers shall be color coded with distinct and recognizable colors in accordance with TIA/EIA-598-B, "Optical Fiber Cable Color Coding." Buffer tube colored stripes shall be inlaid in the tube by means of co-extrusion when required. The nominal stripe width shall be 1 mm.

For cables containing more than 12 buffer tubes, standard colors are used for tubes 1 through 12 and stripes are used to denote tubes 13 through 24. The color sequence applies to tubes containing fibers only, and shall begin with the first tube. If fillers are required, they shall be placed in the inner layer of the cable. The tube color sequence shall start from the inside layer and progress outward.

In buffer tubes containing multiple fibers, the colors shall be stable across the specified storage and operating temperature range and shall not be subject to fading or smearing onto each other. Colors shall not cause fibers to stick together.

The buffer tubes shall be resistant to external forces and shall meet the buffer tube cold bend and shrinkback requirements of 7 CFR 1755.900.

Fillers may be included in the cable core to lend symmetry to the cable cross-section where needed. Fillers shall be placed so that they do not interrupt the consecutive positioning of the buffer tubes. In dual layer cables, any fillers shall be placed in the inner layer. Fillers shall be nominally 2.5 mm or 3.0 mm in outer diameter.

The central member shall consist of a dielectric, glass reinforced plastic (GRP) rod (optional steel central member). The purpose of the central member is to provide tensile strength and prevent buckling. The central member shall be overcoated with a thermoplastic when required to achieve dimensional sizing to accommodate buffer tubes/fillers.

Each buffer tube shall contain a water-swellable yarn for water-blocking protection. The water-swellable yarn shall be non-nutritive to fungus, electrically non-conductive, and homogeneous. It shall also be free from dirt or foreign matter. This yarn will preclude the need for other water-blocking material; the buffer-tube shall be gel-free. The optical fibers shall not require cleaning before placement into a splice tray or fan-out kit.

Buffer tubes shall be stranded around the dielectric central member using the reverse oscillation, or "S-Z", stranding process.

Water swellable yarn(s) shall be applied longitudinally along the central member during stranding.

Two polyester yarn binders shall be applied contrahelically with sufficient tension to secure each buffer tube layer to the dielectric central member without crushing the buffer tubes. The binders shall be non-hygroscopic, non-wicking, and dielectric with low shrinkage.

For single layer cables, a water swellable tape shall be applied longitudinally around the outside of the stranded tubes/fillers. The water swellable tape shall be non-nutritive to fungus, electrically non-conductive, and homogenous. It shall also be free from dirt and foreign matter.

For dual layer cables, a second (outer) layer of buffer tubes shall be stranded over the original core to form a two layer core. A water swellable tape shall be applied longitudinally over both the inner and outer layer. The water swellable tape shall be non-nutritive to fungus, electrically non-conductive, and homogenous. It shall also be free from dirt and foreign matter.

The cables shall contain one ripcord under the sheath for easy sheath removal.

Tensile strength shall be provided by the central member, and additional dielectric yarns as required.

The dielectric yarns shall be helically stranded evenly around the cable core.

The cables shall be sheathed with medium density polyethylene (MDPE). The minimum nominal jacket thickness shall be 1.4 mm. Jacketing material shall be applied directly over the tensile strength members (as required) and water swellable tape. The polyethylene shall contain carbon black to provide ultraviolet light protection and shall not promote the growth of fungus.

The MDPE jacket material shall be as defined by ASTM D1248, Type II, Class C, Category 4 and Grades J4, E7 and E8.

The jacket or sheath shall be free of holes, splits, and blisters.

The cable jacket shall contain no metal elements and shall be of a consistent thickness.

Cable jackets shall be marked with the manufacturer's name, month and year of manufacture, sequential meter or foot markings, a telecommunication handset symbol as required by Section 350G of the National Electrical Safety Code (NESC), fiber count, and fiber type. The actual length of the cable shall be within -0/+1% of the length markings. The print color shall be white, with the exception that cable jackets containing one or more co-extruded white stripes, which shall be printed in light blue. The height of the marking shall be approximately 2.5 mm.

The maximum pulling tension shall be 2700 N (608 lbf) during installation (short term) and 890 N (200 lbf) long term installed.

The shipping, storage, and operating temperature range of the cable shall be -40°C to +70°C. The installation temperature range of the cable shall be -30°C to +70°C.

General Cable Performance Specifications

The fiber optic cable manufacturer shall provide documentation and certify that the fiber optic cable complies with the following EIA-455-xxx Fiber Optic Test Procedures (FOTP):

When tested in accordance with FOTP-3, "*Procedure to Measure Temperature Cycling Effects on Optical Fibers, Optical Cable, and Other Passive Fiber Optic Components*," the change in attenuation at extreme operational temperatures (-40°C and +70°C) shall not exceed 0.15 dB/km at 1550 nm for single-mode fiber and 0.3 dB/km at 1300 nm for multimode fiber.

When tested in accordance with FOTP-82, "*Fluid Penetration Test for Fluid-Blocked Fiber Optic Cable*," a one meter length of unaged cable shall withstand a one meter static head or equivalent continuous pressure of water for one hour without leakage through the open cable end.

When tested in accordance with FOTP-81, "*Compound Flow (Drip) Test for Filled Fiber Optic Cable*," the cable shall exhibit no flow (drip or leak) of filling and/or flooding material at 70°C.

When tested in accordance with FOTP-41, "*Compressive Loading Resistance of Fiber Optic Cables*," the cable shall withstand a minimum compressive load of 220 N/cm (125 lbf/in) applied uniformly over the length of the sample. The 220 N/cm (125 lbf/in) load shall be applied at a rate of 2.5 mm (0.1 in) per minute. The load shall be maintained for a period of 1 minute. The load shall then be decreased to 110 N/cm (63 lbf/in). Alternatively, it is acceptable to remove the 220 N/cm (125 lbf/in) load entirely and apply the 110 N/cm (63 lbf/in) load within five minutes at a rate of 2.5 mm (0.1 in) per minute. The 110 N/cm (63 lbf/in) load shall be maintained for a period of 10 minutes. Attenuation measurements shall be performed before release of the 110 N/cm (63 lbf/in) load. The change in

attenuation shall not exceed 0.15 dB at 1550 nm for single-mode fibers and 0.30 dB at 1300 nm for multimode fiber.

When tested in accordance with FOTP-104, "*Fiber Optic Cable Cyclic Flexing Test*," the cable shall withstand 25 mechanical flexing cycles around a sheave diameter not greater than 20 times the cable diameter. The change in attenuation shall not exceed 0.15 dB at 1550 nm for single-mode fiber and 0.30 dB at 1300 nm for multimode fiber.

When tested in accordance with FOTP-25, "*Repeated Impact Testing of Fiber Optic Cables and Cable Assemblies*," except that the number of cycles shall be two at three locations along a one meter cable length and the impact energy shall be at least 4.4 Nm (in accordance with ICEA S-87-640)", the change in attenuation shall not exceed 0.15 dB at 1550 nm for single-mode fiber and 0.30 dB at 1300 nm for multimode fiber.

When tested in accordance with FOTP-33, "*Fiber Optic Cable Tensile Loading and Bending Test*," using a maximum mandrel and sheave diameter of 560 mm, the cable shall withstand a rated tensile load of 2670N (601 lbf) and residual load of 30% of the rated installation load. The axial fiber strain shall be $\leq 60\%$ of the fiber proof level after completion of 60 minute conditioning and while the cable is under the rated installation load. The axial fiber strain shall be $\leq 20\%$ of the fiber proof level after completion of 10 minute conditioning and while the cable is under the residual load. The change in attenuation at residual load and after load removal shall not exceed 0.15 dB at 1550 nm for single mode fiber and 0.30 dB at 1300 nm for multimode fiber.

When tested in accordance with FOTP-85, "*Fiber Optic Cable Twist Test*," a length of cable no greater than 2 meters shall withstand 10 cycles of mechanical twisting. The change in attenuation shall not exceed 0.15 dB at 1550 nm for single-mode fiber and 0.30 dB at 1300 nm for multimode fiber.

When tested in accordance with FOTP-37, "*Low or High Temperature Bend Test for Fiber Optic Cable*," the cable shall withstand four full turns around a mandrel of ≤ 20 times the cable diameter after conditioning for four hours at test temperatures of -30°C and $+60^{\circ}\text{C}$. Neither the inner or outer surfaces of the jacket shall exhibit visible cracks, splits, tears, or other openings. The change in attenuation shall not exceed 0.30 dB at 1550 nm for single mode fiber and 0.50 dB at 1300 nm for multimode fiber.

Quality Assurance Provision

All cabled optical fibers > 1000 meters in length shall be 100% attenuation tested. The attenuation of each fiber shall be provided with each cable reel. The cable manufacturer shall be TL 9000 registered.

Packaging

Top and bottom ends of the cable shall be available for testing. Both ends of the cable shall be sealed to prevent the ingress of moisture. Each reel shall have a weather resistant reel tag attached identifying the reel and cable. The reel tag shall include the following information:

- Cable Number
- Gross Weight

- Shipped Cable Length in Meters
- Job Order Number
- Product Number
- Customer Order Number
- Date Cable was Tested
- Manufacturer Order Number
- Cable Length Markings
 - a: Top (inside end of cable)
 - b: Bottom (outside end of cable)

The reel (one flange) marking shall include:

- Manufacturer
- Country of origin
- An arrow indicating proper direction of roll when handling
- Fork lift-handling illustration
- Handling Warnings.

Each cable shall be accompanied by a cable data sheet. The cable data sheet shall include the following information:

- Manufacturer Cable Number
- Manufacturer Product Number
- Manufacturer Factory Order Number
- Customer Name
- Customer Cable Number
- Customer Purchase Order Number
- Mark for Information
- Ordered Length
- Maximum Billable Length
- Actual Shipped Length
- Measured Attenuation of Each Fiber

The cable shall be capable of withstanding a minimum-bending radius of 20 times its outer diameter during installation and 10 times its outer diameter during operation without changing the characteristics of the optical fibers.

The cable shall meet all of specified requirements under the following conditions:

- Shipping/storage temperature: -58° F to +158° F (-50° C to +70° C)
- Installation temperature: -22° F to +158° F (-30° C to +70° C)
- Operating temperature: -40° F to +158° F (-40° C to +70° C)
- Relative humidity from 0% to 95%, non-condensing

Optical Patch Cords and Pigtails.

The optical patch cords and pigtails shall comply with the following:

- The optical patch cords shall consist of a section of single fiber, jacketed cable equipped with optical connectors at both ends.

- The factory installed connector furnished as part of the optical patch cords and pigtails shall meet or exceed the requirements for approved connectors specified herein.
- The fiber portion of each patch cord and pigtail shall be a single, jacketed fiber with optical properties identical to the optical cable furnished under this contract.
- The twelve fiber single-mode fiber optic cable shall be installed as a pigtail with factory installed ST compatible connectors.
- The patch cords shall comply with Telcordia GR-326-CORE

Connectors.

The optical connectors shall comply with the following:

- All connectors shall be factory installed ST compatible connectors. Field installed connectors shall not be allowed.
- Maximum attenuation 0.4dB, typical 0.2dB.
- No more than 0.2dB increase in attenuation after 1000 insertions.
- Attenuation of all connectors will be checked and recorded at the time of installation with an insertion test minimum 5 times checked with an OTDR.
- All fibers shall be connectorized at each end.
- All fibers shall terminate at a fiber patch panel
- Unused fibers will be protected with a plastic cap to eliminate dust and moisture.
- Termination shall be facilitated by splicing factory OEM pigtails on the end of the bare fiber utilizing the fusion splicing method. Pigtails shall be one meter in length.

CONSTRUCTION REQUIREMENTS

Experience Requirements.

Personnel involved in the installation, splicing and testing of the fiber optic cables shall meet the following requirements:

- A minimum of three (3) years experience in the installation of fiber optic cables, including fusion splicing, terminating and testing single mode fibers.
- Install two systems where fiber optic cables are outdoors in conduit and where the systems have been in continuous satisfactory operation for at least two years. The Contractor shall submit as proof, photographs or other supporting documents, and the names, addresses and telephone numbers of the operating personnel who can be contacted regarding the installed fiber optic systems.
- One fiber optic cable system (which may be one of the two in the preceding paragraph), which the Contractor can arrange for demonstration to the Department representatives and the Engineer.

Installers shall be familiar with the cable manufacturer's recommended procedures for installing the cable. This shall include knowledge of splicing procedures for the fusion splicer being used on this project and knowledge of all hardware such as breakout (furcation) kits and splice closures. The Contractor shall submit documented procedures to the Engineer for approval and to be used by Construction inspectors.

Personnel involved in testing shall have been trained by the manufacturer of the fiber optic cable test equipment to be used, in fiber optic cable testing procedures. Proof of this training shall be submitted to the Engineer for approval. In addition, the Contractor shall submit documentation of the testing procedures and a copy of the test equipment operation manual for approval by the Engineer.

Installation in Raceways.

Prior to installation, the Contractor shall provide a cable-pulling plan. The plan shall include the following information:

- Identify where each cable will enter the underground system and the direction each pull.
- Identify locations where the cable is pulled out of a handhole, coiled in a figure eight, and pulled back into the hand hole.
- The plan shall address the physical protection of the cable during installation and during periods of downtime.
- Identify the location of slack storage locations
- Identify the locations of splices.
- Identify distances between fiber access points and crossings.

The cable-pulling plan shall be provided to the Engineer for approval a minimum of 15 working days prior to the start of installation. The Engineer's approval shall be for the operation on the freeway and does not include an endorsement of the proposed procedures. The Contractor is responsible for the technical adequacy of the proposed procedures.

During cable pulling operations, the Contractor shall ensure that the minimum bending of the cable is maintained during the unreeling and pulling operations. Unless specified otherwise by the fiber optic cable manufacturer, the outside bend radius of the cable during installation shall be no less than 20 times the outside diameter of the fiber optic cable. Entry guide chutes shall be used to guide the cable into the handhole conduit ports. Lubricating compound shall be used to minimize friction. Corner rollers (wheels), if used, shall not have radii less than the minimum installation-bending radius of the cable. A series array of smaller wheels can be used for accomplishing the bend if the cable manufacturers specifically approve the array.

If figure-eight techniques are used during cable installation, the cable shall be handled manually and stored on the ground. The cable shall be placed on tarps to prevent damage from gravel, rocks, or other abrasive surfaces. Tarps should also be used in muddy conditions to keep the cable clean. Enough area to accommodate the cable length to be stored and sufficient personnel to maintain the required minimum-bending diameter as well as avoid kinking or otherwise damaging the cable shall be provided. If the cable has been figure-eighted in preparation for a forward feed, the figure-eight must be flipped over to access the outside cable end. Provide sufficient personnel to avoid kinking the cable as the figure-eight is flipped over. When removing the cable from the figure-eight, use care to avoid kinking the cable and violating the minimum-bending diameter.

Power assisted or figure-eight eliminator equipment, which is used to eliminate manual figure-eight procedures, shall not be used unless specifically allowed by the cable manufacturer in writing.

The pulling tension shall be continuously measured and shall not be allowed to exceed the maximum tension specified by the manufacturer of the cable. A dynamometer or in-line

tensiometer shall be used to monitor tension in the pull-line near the winch. This device must be visible to the winch operator or used to control the winch. The pulling system shall have an audible alarm that sounds whenever a pre-selected tension level is reached. Tension levels shall be recorded continuously and shall be given to the engineer as well as included in the record drawing package.

The use of a breakaway link (swivel) may be used to ensure that the maximum tension of the cable is not exceeded. Breakaway links react to tension at the pulling eye and shall not be used in lieu of tension measuring devices. All pulling equipment and hardware which will contact the cable during installation must maintain the cable's minimum bend radius. Equipment including sheaves, capstans, bending shoes, and quadrant blocks shall be designed for use with fiber optic cable.

The cable shall be pulled into the conduit as a single component, absorbing the pulling force in all tension elements. The central strength member and Aramid yarn shall be attached directly to the pulling eye during cable pulling. "Basket grip" type attachments, which only attach to the cable's outer jacket, shall not be permitted. A breakaway swivel, rated at 95% of the cable manufacturer's approved maximum tensile loading, shall be used on all pulls. When simultaneously pulling fiber optic cable with other cables, separate grooved rollers shall be used for each cable.

To minimize the exposure of the backbone cable and to facilitate the longer lengths of fiber optic cable, the Contractor shall use a "blown cable" (pneumatically assisted) technique to place the fiber optic cable. A Compressed air cooler shall be used when ambient air temperatures reaches 90°F or more.

Where cable is to be pulled through existing conduit which contains existing cables, optical or other, the existing cables shall be removed and reinstalled with the fiber optic cable as indicated on the plans. The removal of the cable(s) shall be paid for separately. Reinstallation of the existing cables, if indicated on the plans, along with the fiber optic cable shall be included in this item for payment.

Tracer Wire

A tracer wire shall be installed with all fiber optic cable runs. One tracer wire shall be installed along with the fiber optic cable in each raceway. If a raceway has more than one fiber optic cable, only one tracer wire per raceway is required. If there are parallel raceways, a tracer wire is required in each raceway that contains a fiber optic cable. Tracer wire shall be installed in raceway segments which are metallic to provide a continuous tracer wire system.

The tracer wire shall be a direct burial rated, number 12 AWG (minimum) solid (.0808" diameter), steel core soft drawn high strength tracer wire. The wire shall have a minimum 380 pound average tensile break strength. The wire shall have a 30 mil high density yellow polyethylene (HDPE) jacket complying with ASTM-D-1248, and a 30 volt rating.

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

The cost of the tracer wire shall be included in the cost of the fiber optic cable and not paid for separately.

Aerial Fiber Optic Cable

Aerial fiber optic cable assemblies shall be of a self-supporting figure-8 design. The fiber optic cable shall be as described herein and shall be waterblocked utilizing water-swellable materials. The cable assembly shall be designed and manufactured to facilitate midspan access.

The submittal information must include a copy of the standard installation instructions for the proposed cable. Installed cable sag shall not exceed 1% of the span distance. The submittal information must also include catalog cuts for all hardware to be utilized in the installation.

Construction Documentation Requirements

Installation Practices for Outdoor Fiber Optic Cable Systems

The Contractor shall examine the proposed cable plant design. At least one month prior to starting installation of the fiber optic cable plant, the Contractor shall prepare and submit to the Engineer for review and approval, ten (10) copies of the Contractor's "Installation Practices for Outdoor Fiber Optic Cable Systems" manual. This manual shall address the Contractor's proposed practices covering all aspects of the fiber optic cable plant. This submittal shall include all proposed procedures, list of installation equipment, and splicing and test equipment. Test and quality control procedures shall be detailed as well as procedures for corrective action.

Operation and Maintenance Documentation

After the fiber optic cable plant has been installed, ten (10) complete sets of Operation and Maintenance Documentation shall be provided. The documentation shall, as a minimum, include the following:

- Complete and accurate as-built diagrams showing the entire fiber optic cable plant including locations of all splices.
- Final copies of all approved test procedures
- Complete performance data of the cable plant showing the losses at each splice location and each terminal connector.
- Complete parts list including names of vendors.

Testing Requirements

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

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

The Contractor shall provide the date, time and location of any tests required by this specification to the Engineer at least 5 working (7 calendar) days before performing the test. Included with the notification shall be a record drawing of the installed fiber optic cable system. The drawings shall indicate actual installed routing of the cable, the locations of splices, and locations of cable slack with slack quantities identified.

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

A Certified Technician utilizing an Optical Time Domain Reflectometer (OTDR) and Optical Source/Power Meter shall conduct the installation test. The test equipment used shall have been calibrated within the last two years. Documentation shall be provided. The Technician is directed to conduct the test using the standard operating procedures defined by the manufacturer of the test equipment. All fibers installed shall be tested in both directions.

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

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

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

Cable & Fiber Identification:

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

Test Results shall include:

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

Sample Power Meter Tabulation:

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

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

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

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

The test results shall show that the dB/km loss does not exceed +3% of the factory test or 1% of the cable's published production loss. However, no event shall exceed 0.10 dB. If any event is detected above 0.10 dB, the Contractor shall replace or repair the fiber including that event point.

The total loss of the cable (dB), less events, shall not exceed the manufacturer's production specifications as follows: 0.5 dB/km at both 1310 and 1550 nm.

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

Splicing Requirements

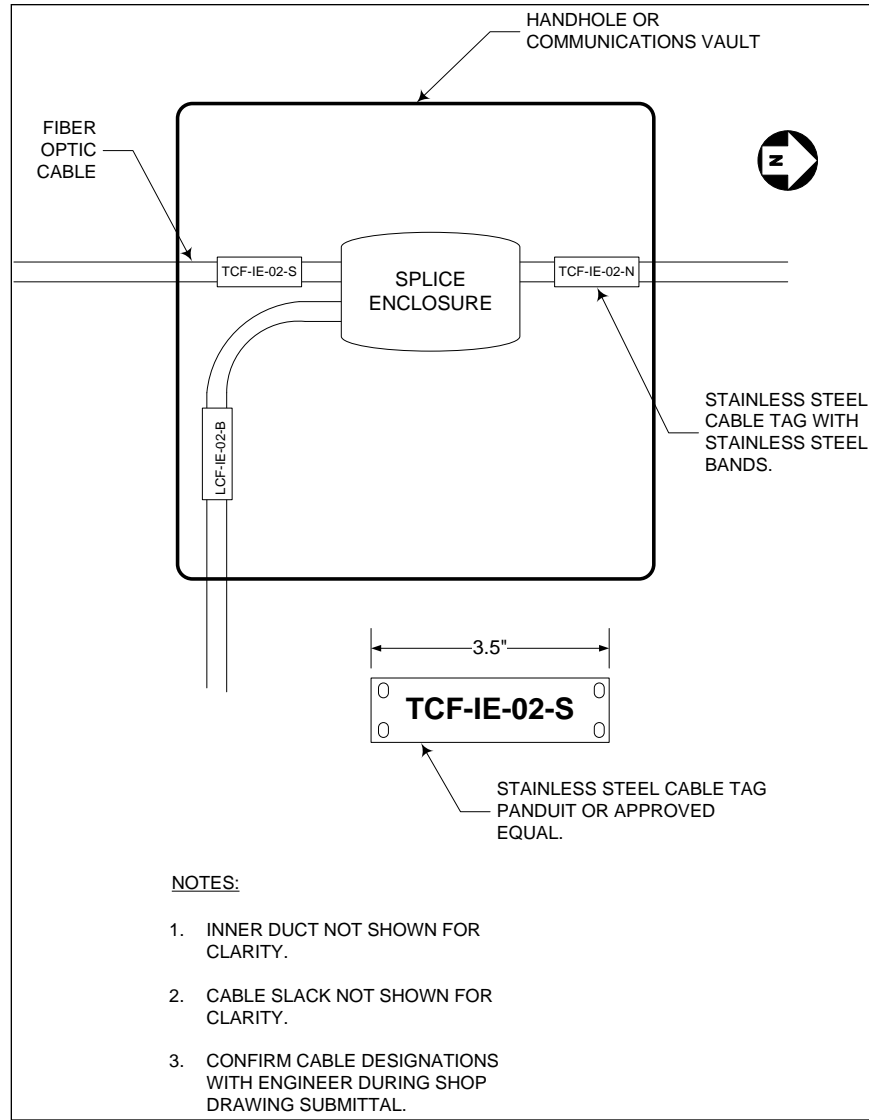
Splices shall be made at locations shown on the Plans. Any other splices shall be permitted only with the approval of the Engineer. Splices will be paid for separately. All splice locations must be identified in the Record Drawings. Cable runs which dead-end at a handhole,

communications vault, interconnect cabinet, or any other type of enclosure, shall be dead ended in a splice enclosure.

Slack Storage of Fiber Optic Cables.

Included as a part of this item, slack fiber shall be supplied as necessary to allow splicing the fiber optic cables in a controlled environment, such as a splicing van or tent. After splicing has been completed, the slack fiber shall be stored underground in handholes or in the raised base adapters of ground mounted cabinets in accordance with the fiber optic cable manufacturer's guidelines. Fiber optic cable slack shall be 100 feet for each cable at each splice location, above or below ground. Fiber optic cable slack shall be 50 feet for each cable at access points, above or below ground, where splicing is not involved. If the innerduct is cut, the ends of the innerduct should extend beyond the first vertical rack so they can be secured at that point. This slack shall be measured for payment.

Fiber optic cable shall be tagged inside handholes with yellow tape containing the text: "CAUTION - FIBER OPTIC CABLE." In addition, permanent tags, as approved by the engineer, shall be attached to all cable in a hand hole or other break-out environment. These tags shall be stainless steel, nominally 0.75" by 1.72", and permanently embossed. These tags shall be attached with stainless steel straps, and shall identify the cable number, the number of fibers, and the specific fiber count. Tags and straps shall be Panduit or approved equal. See figure below:



Label the destination of each trunk cable onto the cable in each handhole, vault or cable termination panel.

Method of Measurement Fiber optic cable will be measured for payment in feet in place installed and tested. Fiber optic cable will be measured horizontally and vertically between the changes in direction, including slack cable. The entire lengths of cables installed in buildings will be measured for payment

Basis of Payment This work will be paid for at the contract unit price per foot for **FIBER OPTIC CABLE** of the type, size, and number of fibers specified. Payment shall not be made until the cable is installed, spliced and tested in compliance with these special provisions.

GENERAL ELECTRICAL REQUIREMENTS

Effective: June 1, 2021

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.

Within 30 calendar days after contract execution, the Contractor shall submit, for approval, through the Traffic Operations Construction Submittals Application (TOCS) system 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.

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

The submittal must clearly identify the specific model number or catalog number of the item being proposed.

For further information and requirements regarding the TOCS system, the Contractor should reference the *TOCS Contractors User Guide*.

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.

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

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

The Department may provide a list of pay items broken out by discipline upon request for a particular contract.

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.

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 fourteen (14) calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

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

Establish the approximate location and operating condition of 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 1 foot (304.8 mm) to either side. The request for the cable locations and marking shall be made at the same time the request for the maintenance transfer and preconstruction inspection is made. The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of 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.”

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.

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.

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

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

- Voltage Tests
- Amperage Tests
- Insulation Resistance Tests
- Continuity tests
- Detector Loop Tests

Lighting systems. The following tests shall be made.

- (1) Voltage Measurements. Voltages in the cabinet from phase to phase and phase to neutral, at no load and at full load, shall be measured and recorded. Voltage readings at the last termination of each circuit shall be measured and recorded.
- (2) Insulation Resistance. Insulation resistance to ground of each circuit at the cabinet shall be measured and recorded with all loads disconnected. Prior to performance of the insulation resistance test, the Contractor shall remove all fuses within all light pole bases on a circuit to segregate the luminaire loads.

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

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

- (3) Loads. The current of each circuit, phase main, and neutral shall be measured and recorded. The Engineer may direct reasonable circuit rearrangement. The current readings shall be within 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 120 months from the date of delivery.
- (b) The Contractor's written guarantee that, for a period of six months after the date of final acceptance of the work, all necessary repairs to or replacement of said warranted material or apparatus for reasons not proven to have been caused by negligence on the part of the user or acts of a third party shall be made by the Contractor at no additional cost to the Department.
- (c) The Contractor's written guarantee for satisfactory operation of all electrical systems furnished and constructed under the contract for a period of six months after final acceptance of the work.

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

- Cover Sheet
- The Electrical Maintenance Contract Management System (EMCMS) location designation, i.e. "L" number

- Summary of Quantities, electrical items only
- Legends, Schedules, and Notes
- Plan Sheets
- Pertinent Details
- Single Line Diagrams
- 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 through TOCS, on CD-ROM 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 three sets of electronically produced drawings in a moisture proof pouch to be kept on the inside door of the controller cabinet or other location approved by the Engineer. These drawings shall show the final as-built circuit orientation(s) of the project in the form of a single line diagram with all 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 three hardcopies and two CD-ROMs of the final documentation shall be submitted. The identical material shall also be submitted through the TOCS system utilizing the following final documentation pay item numbers:

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

Record Drawings shall include Marked up plans, controller info, Service Info, Equipment Settings, Manuals, Wiring Diagrams for each discipline.

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

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

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

- Junction Boxes
- Conduit roadway crossings.
- Controllers.
- Control Buildings.
- Structures with electrical connections, i.e. DMS, lighted signs.
- Electric Service locations.
- CCTV Camera installations.
- Roadway Surveillance installations.
- Fiber Optic Splice Locations.
- Fiber Optic Cables. Coordinates shall be recorded along each fiber optic cable route every 200 feet.
- 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. 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

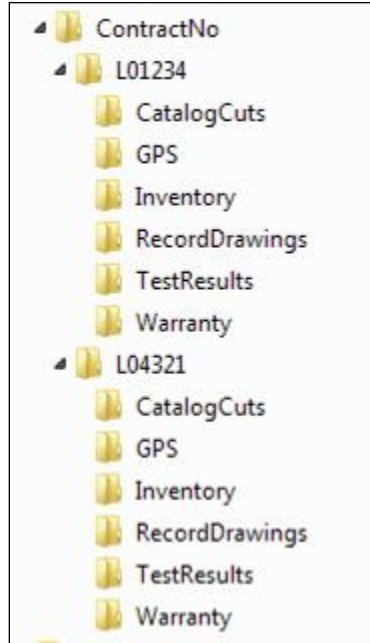
A spreadsheet template will be available from the Engineer for use by the Contractor.

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.

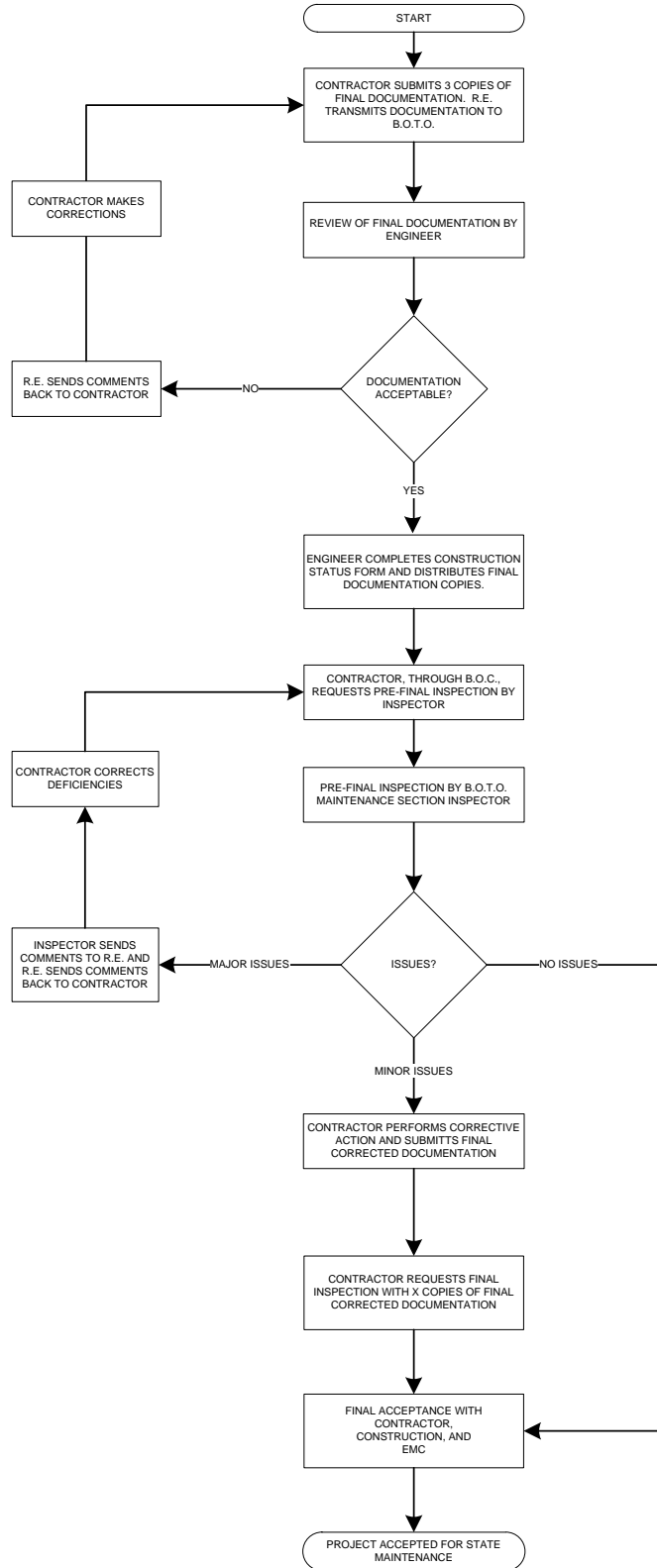
The Final Acceptance Documentation Checklist shall be completed and is contained elsewhere herein.

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 Department assumes the responsibility to protect and maintain the work according to Article 107.30 or at the time of final inspection.

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

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



Final Acceptance Documentation Checklist

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

ITEM	Contractor (Verify)	Resident Engineer (Verify)
Record Drawings -Three hardcopies (11" x 17") -Scanned to two CD-ROMs	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Field Inspection Tests -Voltage -Amperage -Cable Insulation Resistance -Continuity -Controller Ground Rod Resistance (Three Hardcopies & scanned to two CD's)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
GPS Coordinates -Excel file (Check Special Provisions, Excel file scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Job Warranty Letter (Three Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Catalog Cut Submittals -Approved & Approved as Noted (Scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Lighting Inventory Form (Three Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Lighting Controller Inventory Form (Three Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Light Tower Inspection Form (If applicable, Three Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>

Three 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 shall be 11" x 17" size. Temporary lighting plans and removal lighting plans should not be part of the set.

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

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

Job Warranty Letter – See standard specifications.

Cutsheet Submittal – See special provisions "General Electrical Requirements". Scan Approved and Approved as Noted cutsheets.

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

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

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

CD LABEL FORMAT TEMPLATE.

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

MAINTENANCE OF LIGHTING SYSTEMS

Effective: March 1, 2017

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.

Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from any

monies owed to the Contractor. Repeated failures and/or a gross failure of maintenance shall result in the State's Electrical Maintenance Contractor being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

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

Operation of Lighting

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

Method of Measurement

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

Basis of Payment. Maintenance of lighting systems shall be paid for at the contract unit price per calendar month for **MAINTENANCE OF LIGHTING SYSTEM.**

TEMPORARY WOOD POLE, INSTALL ONLY

Effective: January 1, 2012

Description. This item shall consist of retrieving from storage, transporting, and installing a temporary wood pole, and mast as applicable, as specified herein and as indicated on the plans.

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

Item	Article/Section
(a) Light Pole Identification.....	1069.06

CONSTRUCTION REQUIREMENTS

Inspection And Acceptance. The Contractor shall examine the wood pole, and mast as applicable, in the presence of the Engineer and after accepting the pole(s) shall be held responsible for preservation of the condition of each pole, as it was at the time of acceptance, until the Final Acceptance Inspection.

Transportation. The Contractor shall transport, handle the wood pole in complete conformance with industry standard recommendations. The Contractor shall make arrangements to transfer the light poles from the State's storage facility located within District 1 on weekdays between the hours of 8:00 a.m. and 4:00 p.m., excluding State holidays applicable to the Department.

Installation. Installation shall be as described in Article 830.03(c). Unless otherwise indicated, the Contractor shall provide all hardware to install the pole and mast arm as specified herein and indicated on the plans.

Unless otherwise indicated, the wood pole and mast arm, as applicable, shall remain the property of the owner and shall be removed as specified elsewhere herein.

Method Of Measurement. Wood poles shall be counted as, each installed.

Basis Of Payment. This item shall be paid at the contract unit price each for **TEMPORARY WOOD POLE**, of the mounting height, mast arm quantity and length indicated.

LIGHT POLE, SPECIAL

Description.

This item of work shall consist of furnishing and installing per manufacturer's recommendation, Tallmadge lighting units as described in the plans. The lamppost shall consist of a one-piece, cast ductile iron lamppost with a 3 and 4 bolt base pattern design and an Edgewater 80W LED luminaire at 3000K, Type III with LED grade frosted acrylic lens finish painted powder coat river texture black. This item also includes pole wiring, and fuses/fuse holders.

Materials

ATB0-P305-MVOLT-R3-3K

Lumens: 20,070

Watts: 145

Voltage: 120V – 277V

Color Temperature: 300K

Lamp: LED

Mounting Height: 35 ft.

Mounting Arm: 8 ft.

All materials shall be in accordance with the contract plan drawings and applicable portions of Sections 1065, 1066, 1067, and 1069 of the Standard Specifications.

Construction Requirements

All work shall be installed in accordance with Sections 821 and 830 of the Standard Specifications. The Contractor shall be responsible for coordinating the proposed bolt circle dia., anchor bolt size, and handhole orientation for the proposed light poles installed.

Work to be performed under this pay item is indicated in contract plan drawings and shall be in conformance with NEC, IDOT and local ordinances.

Guarantee

The Vendor shall provide a written guarantee for materials, and workmanship for a period of 6 months after final acceptance of the lighting system.

Documentation

All instruction sheets required to be furnished by the manufacturer for materials and supplies and for operation of the equipment shall be delivered to the Engineer.

The manufacturer shall have been incorporated for at least five years and shall have at least five years in the design and manufacturing of roadway lighting. The manufacturer shall provide evidence of financial strength to finance the production of the project by submitting the name of at least three projects completed in the previous calendar year of greater than \$100,000 each. All steel used in the project shall be certified to be provided domestically, and all fixture components used shall be manufactured domestically.

Basis of Payment

This work shall be paid for at the Contract unit price per each LIGHT POLE, SPECIAL.

LIGHTING UNIT COMPLETE (SPECIAL)

Description.

This item of work shall consist of furnishing and installing per manufacturer's recommendation, Tallmadge lighting units as described in the plans. The lamppost shall consist of a one-piece, cast ductile iron lamppost with a 3 and 4 bolt base pattern design and an Edgewater 80W LED luminaire at 3000K, Type III with LED grade frosted acrylic lens finish painted powder coat river texture black. This item also includes pole wiring, and fuses/fuse holders.

Materials

ATB0-P201-MVOLT-R2-3K

Lumens: 4,983

Watts: 36

Voltage: 120V – 277V

Color Temperature: 300K

Lamp: LED

Mounting Height: 14 ft.

Mounting Arm: 0 ft.

All materials shall be in accordance with the contract plan drawings and applicable portions of Sections 1065, 1066, 1067, and 1069 of the Standard Specifications.

Construction Requirements

All work shall be installed in accordance with Sections 821 and 830 of the Standard Specifications. The Contractor shall be responsible for coordinating the proposed bolt circle dia., anchor bolt size, and handhole orientation for the proposed light poles installed.

Work to be performed under this pay item is indicated in contract plan drawings and shall be in conformance with NEC, IDOT and local ordinances.

Guarantee

The Vendor shall provide a written guarantee for materials, and workmanship for a period of 6 months after final acceptance of the lighting system.

Documentation

All instruction sheets required to be furnished by the manufacturer for materials and supplies and for operation of the equipment shall be delivered to the Engineer.

The manufacturer shall have been incorporated for at least five years and shall have at least five years in the design and manufacturing of roadway lighting. The manufacturer shall provide evidence of financial strength to finance the production of the project by submitting the name of at least three projects completed in the previous calendar year of greater than \$100,000 each. All steel used in the project shall be certified to be provided domestically, and all fixture components used shall be manufactured domestically.

Basis of Payment

This work shall be paid for at the Contract unit price per each LIGHTING UNIT COMPLETE (SPECIAL).

ELECTRIC UTILITY SERVICE CONNECTION (COMED)

Effective: January 1, 2012

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.

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.

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

For bidding purposes, this item shall be estimated as \$4,000.

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.

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.

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

Phase Conductor		Messenger wire			
Size AWG	Stranding	Average Insulation Thickness		Minimum Size AWG	Stranding
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.”

TEMPORARY INFORMATION SIGNING

Effective: November 13, 1996

Revised: January 29, 2020

Description.

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

Materials.

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

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

Note 1. The Contractor may use 5/8 inch (16 mm) instead of 3/4 inch (19 mm) thick plywood.

Note 2. The sign face material shall be in accordance with the Department's Fabrication of Highway Signs Policy.

Note 3. The overlay panels shall be 0.08 inch (2 mm) thick.

GENERAL CONSTRUCTION REQUIREMENTS

Installation.

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

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 701.14 and Article 720.04. The signs shall be 7 ft (2.1 m) above the near edge of the pavement and shall be a minimum of 2 ft (600 mm) beyond the edge of the paved shoulder. A minimum of two (2) posts shall be used.

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

Method of Measurement.

This work shall be measured for payment in square feet (square meters) edge to edge (horizontally and vertically).

All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

Basis Of Payment.

This work shall be paid for at the contract unit price per square foot (square meter) for TEMPORARY INFORMATION SIGNING.

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.

TRAFFIC CONTROL AND PROTECTION, (SPECIAL)

Delete Article 701.20 and replace it with the following:

This work will be paid for at the Contract LUMP SUM price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL). This lump sum price shall be payment in full for all materials, labor and equipment required for: handling, furnishing, transporting, installing, maintaining, relocating and removing all traffic control devices and signage required for to fully protect construction operations and the general public; including implementing any detour plans shown on the Drawings. This lump sum price shall also include all materials, labor and equipment required or: furnishing, installing, relocating and removing steel plates and other temporary bridging over trenches, auger pits, receiving pits and other areas disturbed by construction activities. The salvage value of the materials removed shall be reflected in the price bid for this Item. Progress payments for traffic control will be made in direct proportion to the value of work completed. Contractor shall also refer to the IDOT Standards included herein for additional traffic control measures. The Contractor is advised that specific liquidated damages apply for failure to maintain traffic control devices.

All TRAFFIC CONTROL AND PROTECTION (SPECIAL) shall include any and all items required for pedestrian traffic control, including the delivery, placement, maintenance, removal, and relocation of all pedestrian routes, temporary ramps, signage, barricades, and any other traffic control items required or as directed by the Engineer.

All TRAFFIC CONTROL AND PROTECTION (SPECIAL) shall include any and all items required for the detour setup, maintenance, and removal, including all signs and other items as shown on the plans, and any other traffic control items required or as directed by the Engineer.

MAST ARM SIGN PANELS

Effective: May 22, 2002

Revised: July 1, 2015

720.01TS

Add the following to Article 720.02 of the Standard Specifications:

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

TRAFFIC SIGNAL GENERAL REQUIREMENTS

Effective: May 22, 2002

Revised: March 1, 2024

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 International Municipal Signal Association (IMSA)/Illinois Public Service Institute (IPSI) Traffic Signal Technician Level II certification. A copy of the certification shall be immediately available upon request of the Engineer. The work to be done under the Contract consists of furnishing, installing, and maintaining all traffic signal work and items as specified in the plans and as specified herein in a manner acceptable and approved by the Engineer.

Definitions of Terms.

Add the following to Section 101 of the Standard Specifications:

101.56 Manufacturer. Company that sells a particular type of product directly to the Contractor or the Vendor.

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

- (1) Be full service with on-site facilities to assemble, test and troubleshoot traffic signal controllers and cabinet assemblies.
- (2) Maintain an inventory of IDOT District One approved controllers and cabinets.
- (3) Be staffed with permanent sales and technical personnel able to provide traffic signal controller and cabinet expertise and support.
- (4) Have technical staff that hold current IMSA/IPSI Traffic Signal Technician Level III certification and shall attend traffic signal turn-ons as well as cabinet and/or controller modifications.

Submittals.

Revise Article 801.05 of the Standard Specifications to read:

"All material approval requests shall be submitted electronically following District guidelines unless directed otherwise by the Engineer. Submittal requirements shall include, but not limited to the following:

- (1) All material approval requests shall be made prior to or no later than the date of the preconstruction meeting. A list of major traffic signal items can be found in Article 801.05. Material or equipment which is similar or identical shall be the product of the same manufacturer, unless necessary for system continuity. Traffic signal materials and equipment shall bear the 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 (4) 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 (4) 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.
- (8) The Contract number or Permit number, project location/limits, and corresponding pay code number must be on each sheet of correspondence, material approval, and mast arm poles and assemblies drawings.
- (9) Where certifications and/or warranties are specified, the information submitted for approval shall include certifications and warranties. Certifications involving inspections and/or tests of material shall be complete with all test data, dates, and times.
- (10) After the Engineer reviews the submittals for conformance with the design concept of the project, the Engineer will stamp the drawings indicating their status as 'Approved', 'Approved-As-Noted', 'Disapproved', or 'Incomplete'. Since the Engineer's review is for conformance with the design concept only, it is the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, layout drawings, or other documents by the Department's approval thereof. The Contractor must still be in full compliance with Contract and specification requirements.
- (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) The Contractor shall not order major equipment such as mast arm assemblies prior to Engineer approval of the Contractor marked proposed traffic signal equipment locations to assure proper placement of Contract required traffic signal displays, push buttons and other facilities. Field adjustments may require changes in proposed mast arm length and other coordination.
- (15) Revised cabinet wiring diagrams shall be submitted whenever any wiring modifications are made to the traffic signal cabinet."

Marking Proposed Locations.

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

Add the following to Article 801.09 of the Standard Specifications:

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

Inspection of Electrical Systems.

Add the following to Article 801.10 of the Standard Specifications:

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

Maintenance and Responsibility of Traffic Signal and Flashing Beacon Installations.

Replace Article 801.11(b) of the Standard Specifications to read:

- (b) Traffic Signals and Flashing Beacons. The Contractor shall be responsible for maintaining the traffic signal/flashing beacon installation in proper operating condition.
- (1) General.
- a. The Contractor must notify the Area Traffic Signal Maintenance and Operations Engineer of their intent to begin any physical construction work on the Contract or any portion thereof. This notification must be made a minimum of seven (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 fulfill the Contractor's inspection date request(s); however, workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested inspection date(s) cannot be scheduled by the Department.

- b. Full maintenance responsibility shall start upon the successful completion of a maintenance transfer inspection, or as directed by the Engineer. If the Contractor begins any physical work on the Contract or any portion thereof prior to a traffic signal inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The Contractor will become responsible for repairing or replacing all equipment that is not operating properly or is damaged at the time of transfer at no cost to the owner of the traffic signal equipment. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection, otherwise the traffic signal installation will not be accepted.
- c. All traffic signals within the limits of the Contract or those which have the item "MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION," "TEMPORARY TRAFFIC SIGNAL INSTALLATION", "TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION", "TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNAL INSTALLATION", and/or "MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION" shall become the full responsibility of the Contractor. Maintenance responsibility shall end upon issuance of final acceptance by the Engineer.
- d. The Contractor shall have electricians with IMSA/IPSI Traffic Signal Technician Level II certification on staff to provide signal maintenance. A copy of the certification shall be immediately available upon request by the Engineer.
- e. This item shall include maintenance of all traffic signal equipment and other connected and related equipment such as flashing beacons, emergency vehicle preemption (EVP) equipment, master controllers, network switches, uninterruptable power supply (UPS) and batteries, pan-tilt-zoom (PTZ) cameras, vehicle detection, handholes, lighted signs, telephone service installations, cellular modems, radios, communication cables, and other traffic signal equipment. All conduit and related equipment to adjacent intersections shall be maintained to the far back handhole, or as directed by the Engineer. If adjacent intersections are part of Contract work, then maintenance of all conduit and related equipment shall be included in this item.
- f. Regional transit, County, and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as network switches and transit signal priority (TSP, SCP, and BRT) servers, radios, and other devices, where maintenance shall be coordinated with the owner.
- g. Maintenance shall not include automatic traffic enforcement equipment such as red light enforcement cameras, detectors, or peripheral equipment.

This equipment is operated and maintained by others and shall be deactivated while on Contractor maintenance.

- h. The energy charges for the operation of the traffic signal installation shall be paid for by the Contractor.

(2) Maintenance.

- a. The Contractor shall inspect all traffic signal equipment and appurtenances every two (2) weeks to ensure they are functioning properly. Signal heads shall be properly adjusted, including plumb, and tightly mounted. All controller cabinets, signal posts, and controller pedestals shall be tight on their foundations and in alignment. Deficient equipment shall be repaired or replaced as necessary. The Contractor shall check signal system communications and phone lines to assure proper operation. This item includes, as routine maintenance, all portions of EVP equipment. The Contractor shall always maintain enough materials and equipment in stock to provide effective temporary and permanent repairs. The Contractor shall supply a detailed maintenance log monthly that includes dates, locations, names of electricians performing the required checks and inspections, and any other information requested by the Engineer. The Contractor shall attend any additional inspections as requested by the Engineer. The Contractor shall check the controllers, relays, and detectors after receiving complaints or calls to ascertain that they are functioning properly and make all necessary repairs and replacement.
- b. The Contractor is advised that the existing and/or temporary traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation which exceeds fifteen (15) minutes must have prior approval from the Engineer. Approval to shut down the traffic signal installation will only be granted during the period extending from 9:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.
- c. The Contractor shall provide immediate corrective action when any part(s) of the signal fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. When repairs at a signalized intersection require that the controller be disconnected or otherwise removed from normal operation, and power is available, the Contractor shall place the traffic signal installation in flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor shall install cones on all lane lines at the stop bar on each approach, R1-1 (36 in. minimum) "STOP" signs at the stop bar on each approach on the right side and on raised medians (where applicable), and black on fluorescent orange "SIGNALS OUT AHEAD" warning signs followed by fluorescent orange W3-1 symbolic stop ahead warning signs on all approaches to the intersection.
- d. Temporary replacement of a damaged or knocked down mast arm pole assembly shall require construction of a full or partial span wire signal

installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals is not permitted.

- e. The Contractor shall provide the Engineer with two (2) 24-hour telephone numbers for the maintenance of the traffic signal installation and for emergency calls by the Engineer.
- f. Traffic signal equipment which is lost, damaged, or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of the Standard Specifications and these special provisions.
- g. The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals and other equipment noted herein. The Contractor shall respond to all emergency calls from the Department or others within one (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 equipment meeting current District One traffic signal specifications. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional cost to the Contract. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal installation in proper operating condition, or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the Department's Electrical Maintenance Contractor perform the maintenance work. The Contractor shall be responsible for all of the Department's Electrical Maintenance Contractor's costs and liquidated damages of \$1,000 per day per occurrence. The Department's Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The Contractor shall pay this bill within 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 inspect the traffic signal installation that has been transferred to the Contractor for maintenance. Final replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection, otherwise the traffic signal installation will not be accepted. Cable splices outside the controller cabinet shall not be allowed. The Department may inspect any signaling device on the Department's highway system at any time without notification. The Contractor shall not install padlocks on traffic signal cabinets or otherwise restrict the Department's access to the cabinet or controller.
- h. Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the current edition of the 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.

- i. The Contractor shall be responsible to clear snow, ice, dirt, debris, vegetation, temporary fence, or other condition that obstructs visibility of any traffic signal display or access to traffic signal equipment.
- j. The Contractor shall maintain the traffic signal in normal operation during any loss of utility or battery backup power. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries. Temporary power shall not be paid for separately but shall be included in the Contract.

(3) Basis of Payment. This work will be paid for at the Contract unit price per each for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION, TEMPORARY TRAFFIC SIGNAL INSTALLATION, TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION, or TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNAL INSTALLATION. Each location will be paid for separately. Maintenance of a flashing beacon shall be paid for at the Contract unit price for MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION. Each flashing beacon will be paid for separately.

Damage to Traffic Signal System.

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

“Any traffic signal control equipment that is damaged and non-repairable or not operating properly from any cause shall be replaced with new equipment meeting current District 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. Repair or replace any equipment damaged within the time shown in the table below:

ITEM	RESPONSE TIME	SERVICE RESTORATION	PERMANENT REPAIR (calendar days)
Cabinet	1 hour	24 hours	21 days
Controllers and Peripheral Equipment	1 hour	4 hours	21 days
System Detector Loop	1 hour	N/A	7 days
All Other Detectors	1 hour	N/A	21 days
Signal Head and Lenses	1 hour	4 hours	7 days
Aviation Red Beacon	1 hour	4 hours	7 days
Mast Arm Assembly and Pole	1 hour	4 hours	7 days
Traffic Signal Post	1 hour	4 hours	7 days
Cable and Conduit	1 hour	4 hours	7 days
Interconnect and Telemetry	1 hour	4 hours	7 days
Graffiti Removal	N/A	N/A	7 days
Misalignment of Signal Heads	1 hour	4 hours	4 hours
Closed Loop Monitoring System	1 hour	24 hours	14 days

ITEM	RESPONSE TIME	SERVICE RESTORATION	PERMANENT REPAIR (calendar days)
Post and Poles Plumb Vertically	N/A	N/A	21 days
Controller, Post & Pole Foundations	N/A	N/A	21 days
Complaints, Calls, Controller or System Alarms, Timing, Phasing, Programming	1 hour	4 hours	N/A
Patrol Truck Deficiencies	N/A	24 hours	24 hours
Signal Heads Visibility	1 day	2 days	14 days

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

Replacement of any equipment for any reason shall be reported to the Area Traffic Signal Maintenance and Operations Engineer in writing within 24 hours. Permanent and temporary replacement of the controller and/or cabinet shall require inspection and testing by the Vendor.

Automatic Traffic Enforcement equipment, such as red light enforcement cameras, detectors, and peripheral equipment, that is damaged or not operating properly from any cause, shall be the responsibility of the municipality or the automatic traffic enforcement company per Permit agreement.”

Traffic Signal Inspection (TURN-ON).

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

“Turn-on. It is the intent to have all electric work completed and equipment field tested by the Contractor and/or Vendor prior to the Department’s “turn-on” field inspection. If in the event the Engineer determines work is not complete and the inspection will require more than two (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 Contractor requests a turn-on and inspection of the completed traffic signal installation(s), the request must be made to the Area Traffic Signal Maintenance and Operations Engineer a minimum of seven (7) working days prior to the time of the requested inspection. The Department will attempt to fulfill the Contractor’s turn-on and inspection date request(s); however, workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested turn-on and inspection date(s) cannot be scheduled by the Department. The Department will not grant a field inspection until written or electronic notification is provided from the Contractor that the equipment has been field tested and the intersection is operating according to Contract requirements. The Contractor must invite local fire department personnel to the turn-on when emergency vehicle preemption (EVP) is included in the project. When the Contract includes the item RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM, OPTIMIZE TRAFFIC SIGNAL SYSTEM, and/or TEMPORARY TRAFFIC SIGNAL TIMING, the Contractor must notify the SCAT

Consultant of the turn-on/detour implementation schedule, as well as stage changes and phase changes during construction.

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

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

Upon demonstration that the signals are operating and all work is completed in accordance with the Contract and to the satisfaction of the Engineer, the Engineer will then allow the signals to be placed in continuous operation. The signals shall continue to be maintained by the Contractor until final acceptance.

The Department requires the following Final Project Documentation from the Contractor at traffic signal turn-ons in electronic format in addition to hard copies where noted. An electronic media device shall be submitted with separate folders corresponding to each numbered title below. The electronic media device shall be labeled with date, project location, company, and Contract or Permit number. Electronic record drawings and material approvals shall be submitted prior to traffic signal turn-on for review by the Department as described in the Record Drawings section herein.

Final Project Documentation:

- (1) Record Drawings. Electronically produced signal plans of record with field revisions marked in red. Two (2) hard copies of 11 in. x 17 in. record drawings shall also be provided.
- (2) Field Testing. Written notification from the Contractor and the Vendor of satisfactory field testing with corresponding material performance measurements, such as for detector loops and fiber optic systems (see Article 801.13).
- (3) Material Approvals. Material approval documentation.
- (4) Manuals. Operation and service manuals of the signal controller and associated control equipment.
- (5) Cabinet Wiring Diagram and Cable Logs. Five (5) hard copies of 11 in. x 17 in. cabinet wiring diagrams shall be provided along with electronic PDF and DGN files of the cabinet wiring diagram. Five (5) 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.
- (6) Warrantees and Guarantees. All manufacturer and Contractor warrantees and guarantees required by Article 801.14.
- (7) GPS Coordinates. GPS coordinates of traffic signal equipment as described in the Record Drawings section herein.

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

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

All punch list work shall be completed within two (2) weeks after the turn-on. The Contractor shall notify the Area Traffic Signal Maintenance and Operations Engineer to schedule an inspection of all punch list work. Failure to meet these time constraints shall result in liquidated damage charges of \$500 per month per incident.

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

Record Drawings.

The requirements listed for Electrical Installation shall apply for Traffic Signal Installations in Article 801.16. Revise the second and third paragraphs of Article 801.16 of the Standard Specifications to read:

“When the work is complete, and seven (7) days before the request for a final inspection, electronic Contract drawings, stamped “RECORD DRAWINGS”, shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor’s supervising Engineer or electrician. The record drawings shall be submitted in PDF format. If the Contract consists of multiple intersections, each intersection shall be saved as an individual PDF file with TS# and location name in its file name.

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

The Contractor shall provide two (2) 11 in. x 17 in. hard copies of electronically produced final record drawings to be kept inside each traffic signal cabinet within project limits.”

Add the following to Article 801.16 of the Standard Specifications:

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

- All Mast Arm Poles and Posts

- Traffic Signal Wood Poles
- Railroad Bungalow
- UPS
- Handholes
- Controller Cabinets
- Communication Cabinets
- Electric Service Disconnect locations
- CCTV/PTZ Camera installations

Datum to be used shall be North American 1983.

Data shall be provided in electronic format and shall be in .csv format. Latitude and Longitude shall be in decimal degrees with a minimum of 6 decimal places. Each coordinate shall have the following information:

- File shall be named: TSXXX_YY-MM-DD.csv (i.e. TS22157_24-01-01.csv)
- Each intersection shall have its own file
- Row 1 should have the location name (i.e. IL 31 @ Klausen)
- Row 2 is blank
- Row 3 is the headers for the columns
- Row 4 starts the data
- Column A (Date) – should be in the following format: MM/DD/YYYY
- Column B (Item) – as shown in the table below
- Column C (Description) – as shown in the table below
- Column D and E (GPS Data) – should be in decimal form

Examples:

Date	Item	Description	Latitude	Longitude
01/01/2024	MP (Mast Arm Pole)	NEQ, NB, Dual, Combination Pole	41.580493	- 87.793378
01/01/2024	HH (Handhole)	Heavy Duty, Fiber, Intersection, Double	41.558532	- 87.792571
01/01/2024	ES (Electrical Service)	Ground mount, Pole mount	41.765532	- 87.543571
01/01/2024	CC (Controller Cabinet)		41.602248	- 87.794053
01/01/2024	PTZ (PTZ)	NEQ extension pole	41.593434	- 87.769876
01/01/2024	POST (Post)		41.651848	- 87.762053
01/01/2024	MCC (Master Controller Cabinet)		41.584593	- 87.793378
01/01/2024	COMC (Communication Cabinet)		41.584600	- 87.793432
01/01/2024	BBS (Battery Backup System)		41.558532	- 87.792571

Data collection can be made as construction progresses or can be collected after all items are installed. If the data is unacceptable, the Contractor shall make corrections to the data collection equipment and/or process and resubmit the data for review and approval as specified.

Data shall have a minimum 1 ft accuracy after post processing.”

Restoration of Work Area.

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

“801.17 Restoration of Work Area. Restoration of the traffic signal work area shall be included in the related pay items such as foundation, conduit, handhole, underground raceways, detector loop installation or replacement, etc. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded. All brick pavers disturbed in the work area shall be restored to their original configuration as directed by the Engineer. All damaged brick pavers shall be replaced with a comparable material approved by the Engineer.

Exposed holes created from removal or relocation of traffic signal equipment shall be sealed using a zinc-plated fender washer with toggle bolt.

Restoration of the work area shall be included in the Contract without any extra compensation allowed to the Contractor.

Removal, Disposal, and Salvage of Existing Traffic Signal Equipment.

The removal, disposal, and/or salvage of existing traffic signal equipment shall become the property of the Contractor and disposed of by the Contractor outside the State’s right-of-way, unless otherwise noted. No additional compensation shall be provided to the Contractor for removal, disposal or salvage expense for the work in the Contract.”

Bagging Signal Heads.

Light tan colored traffic and pedestrian signal reusable covers shall be used to cover dark/un-energized signal sections, visors, and retroreflective backplates. Covers shall be made of outdoor fabric with urethane coating for repelling water, have elastic fully sewn around the cover ends for a tight fit over the visor, and have a minimum of two (2) straps with buckles to secure the cover to the backplate. A center mesh strip allows viewing without removal for signal status testing purposes. Covers shall include a message indicating the signal is not in service. Pedestrian pushbuttons that are not in service shall be covered with a durable material such as described above or burlap that is secured in a weather-resistant manner. The entire housing, including the pedestrian sign, shall also be covered on the front side.

Turn-on of New Traffic Signal Installations.

The following only applies to new traffic signals at previously unsignalized locations.

The signal responsibility shall begin at the start of signal construction and shall end upon issuance of final acceptance by the Engineer. New traffic signal heads and indications may not be installed more than two (2) weeks (14 calendar days) prior to the scheduled turn-on of the traffic signal to avoid motorist confusion caused by the presence of new signal heads, even if properly covered. Unenergized signal indications shall be bagged until one (1) hour prior to the scheduled turn-on per the Bagging Signal Heads section above.

New stop bars and crosswalks on approaches that did not previously have stop control shall NOT be installed until the day of the traffic signal turn-on.

A Portable Changeable Message Sign (PCMS) must be placed two (2) weeks prior to the scheduled new traffic signal turn-on for all approaches to the intersection with the following messages:

NEW
TRAFFIC
SIGNAL

STARTING
MMM ##

where "MMM" and "##" are the 3-character month abbreviation and day of the scheduled turn-on, respectively.

On the day of the turn-on, change messages to read:

NEW
SIGNAL
AHEAD

BE
PREPARED
TO STOP

The PCMS must remain in place for two (2) weeks following the day of the turn-on.

Conflicting Stop signs shall be removed immediately at the time of the traffic signal turn-on.

Locating Underground Facilities.

Revise Section 803 to the Standard Specifications to read:

"IDOT traffic signal facilities are not part of any of the one-call locating service such as J.U.L.I.E or Digger. If the Contract requires the maintenance services of an Electrical Contractor, the Contractor shall be responsible at their own expense for locating all existing IDOT electrical facilities, including but not limited to interconnect conduit and handholes, prior to performing any work. A maintenance transfer is required prior to any locating work. If this Contract does not require the maintenance services of an Electrical Contractor, the Contractor may request one free locate for existing IDOT electrical facilities from the District One Electrical Maintenance Contractor prior to the start of any work. Additional requests will be at the expense of the Contractor. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any facilities damaged during construction at their expense.

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

The Contractor shall take whatever precautions to protect the electric cable or electric conductors in conduit from damage during location and construction operations. If the wiring is damaged, the Contractor shall replace the entire length of cable or conductors in conduit, in a manner satisfactory to the Engineer. Splicing below grade will not be permitted.

In the event the repairs are not made by the Contractor, the Contractor shall reimburse the Department for such repairs within sixty (60) days of receiving written notification of said damage. Otherwise, the cost of such repairs will be deducted from monies due or which will become due the Contractor under the terms of the Contract.”

Grounding of Traffic Signal Systems

Revise Section 806 of the Standard Specifications to read:

“All traffic signal systems, equipment and appurtenances shall be properly grounded in strict conformance with the NEC. This work shall be in accordance with IDOT’s District 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 and conduit protruding from handhole walls.
 - (3) All metallic and non-metallic raceways, including spare or empty raceways, shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 V and/or fiber optic cable will not be required to include an equipment grounding conductor.

- (4) Individual conductor splices in handholes shall be soldered and sealed with heat shrink. When necessary to maintain effective equipment grounding, a full cable heat shrink shall be provided over individual conductor heat shrinks.

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

SERVICE INSTALLATION (TRAFFIC SIGNALS)

Effective: May 22, 2002

Revised: March 1, 2024

805.01TS

Revise Section 805 of the Standard Specifications to read:

Description.

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

General.

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

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

Materials.

a. General. The completed control panel shall be constructed in accordance with UL Std. 508A, Industrial Control Panel, and carry the UL label. Wire terminations shall be UL listed.

b. Enclosures.

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

(2) Ground Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 3R unfinished single door design with back panel. The cabinet shall be fabricated from Type 5052 H-32 aluminum with the frame and door 0.125 in. (3.175 mm) thick, the top 0.250 in. (6.350 mm) thick and the bottom 0.500-inch (12.70 mm) thick. Seams shall be continuous welded and ground smooth. The door and door opening shall be double flanged. The door shall be approximately 80% of the front surface, with a full length tamperproof stainless steel .075 in. (1.91 mm) thick hinge bolted to the

cabinet with stainless steel carriage bolts and nylock nuts. The locking mechanism shall be slam-latch type with a keyhole cover. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 40 in. (1000 mm) high, 16 in. (400 mm) wide and 15 in. (375 mm) in depth is required. The cabinet shall be mounted upon a Type A concrete foundation as indicated on the plans. The foundation is paid for separately.

- (3) All enclosures shall include a green external power indicator LED light with circuitry as shown in the Electrical Service-Panel Diagram detail sheet. For pole mounted service enclosures, the power indicator light shall be mounted as shown in the detail. For ground mounted enclosures, the power indicator light shall be mounted on the side of the enclosure most visible from the major roadway.
- (c) Electric Utility Meter Housing and Riser. The electric meter housing and meter socket shall be supplied and installed by the Contractor. The Contractor is to coordinate the work to be performed and the materials required with the utility company to make the final connection at the power source. Electric utility required risers, weather/service head, and any other materials necessary for connection shall also be included in the pay item. Materials shall be in accordance with the electric utility's requirements. For ground-mounted service, the electric utility meter housing shall be mounted to the enclosure. The meter shall be supplied by the utility company.
- (d) Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 V load circuit by the means MOV and thermal fusing technology. The response time shall be < 5 ns and operate within a range of -40°C to +85°C. The surge protector shall be UL 1449 Listed.
- (e) Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 V circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 A, 120 V and the auxiliary circuit breakers shall be rated 10 A, 120 V.
- (f) Fuses and Fuseholders. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 VAC and shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage.
- (g) Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.
- (h) Utility Services Connection. The Contractor shall notify the utility company marketing representative a minimum of thirty (30) working days prior to the anticipated date of hook-up. This 30-day advance notification will begin only after the utility company marketing representative has received service charge payments from the Contractor. Prior to contacting the utility company marketing representative for service connection,

the service installation controller cabinet and cable must be installed for inspection by the utility company.

- (i) Ground Rod. Ground rods shall be copper-clad steel, a minimum of 10 ft (3.0m) in length, and 3/4 in. (20mm) in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the Contract.

Installation.

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

Basis of Payment.

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

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: March 1, 2024

810.02TS

Revise Article 810.04 of the Standard Specifications to read:

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

Add the following to Article 810.04 of the Standard Specifications:

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

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

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

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

LIGHTING CONTROLLER FOUNDATION

Description. The work shall consist of foundation shall be a cast in place concrete pad to support the Lighting Controller.

Material. Concrete shall be Portland cement concrete conforming to the following:

- a. Portland Cement Concrete _____ Section 1020
- b. Portland Expansion Joint filler _____ Section 1051
- c. Anchor Bolts and Rods _____ Section 1006.09

Installation. The lighting controller installation shall be according to the details, location, and orientation shown on the plans

Work Pad. A 4-inch thick Portland cement concrete work pad, not less than 48 x 48 in. shall be provided in front of the cabinet, except where the cabinet faces as adjacent sidewalk.

All conduit entrances into the lighting controller shall be sealed with a pliable waterproof material.

Concrete Foundation. The Contractor shall confirm the orientation of the lighting controller, and its door side, with the Engineer, prior to installing the foundation. A Portland cement concrete foundation shall be constructed to the details shown on the plans and is included as a part of this pay items and shall not be paid for separately. The top of the foundation shall be 12- inches above grade.

The lighting controller enclosure shall be set plumb and level on the foundation. It shall be fastened to the anchor rods with hot-dipped galvanized or stainless steel nuts and washers. Foundation mounted lighting controllers shall be caulked at the base with silicone.

Where the controller has a metal bottom plate, the plate shall be sealed with a rodent and dust / moisture barrier.

Grounding. Grounding shall be as shown on the lighting controller detail drawings. Ground rods, ground wells, connections, ground wire and other associated items will be included in the cost the lighting controller and shall not be paid for separately.”

Method of Measurement. Each lighting controller concrete foundation shall be counted each for payment.

Basis of Payment. This item will be paid for at the contract unit price each for LIGHTING CONTROLLER FOUNDATION, which payment will be in full for furnishing and installing the pole in place.

HANDHOLES

Description.

Add the following to Section 814 of the Standard Specifications:

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

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

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

The cover of the handhole frame shall be labeled "Traffic Signals" with legible raised letters. Handhole covers for Red Light Running Cameras shall be labeled "RLRC".

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

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

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

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

Add the following to Section 814 of the Standard Specifications:

Cast-In-Place Handholes.

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

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

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

Precast Round Handholes.

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

For grounding purposes, the handhole frame shall have provisions for a 7/16 in. (11 mm) diameter stainless steel bolt cast into the frame. For the purpose of attaching the grounding conductor to

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

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

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

FIBER OPTIC TRACER CABLE

Effective: May 22, 2002

Revised: November 1, 2023

817.02TS

The cable shall meet the requirements of Section 817 of the Standard Specifications, except for the following:

Add the following to Article 817.03 of the Standard Specifications:

“In order to trace the fiber optic cable after installation, the tracer cable shall be installed in the same conduit as the fiber optic cable in locations shown on the plans. The tracer cable shall be continuous, extended into the controller cabinet and terminated on a barrier type terminal strip mounted on the side wall of the controller cabinet. The barrier type terminal strip and tracer cable shall be clearly marked and identified. All tracer cable splices shall be kept to a minimum and shall incorporate maximum lengths of cable supplied by the manufacturer. The tracer cable will be allowed to be spliced at handholes only. The tracer cable splice shall use a Western Union Splice soldered with resin core flux and shall be soldered using a soldering iron. Blow torches or other devices which oxidize copper cable shall not be allowed for soldering operations. All exposed surfaces of the solder shall be smooth. The splice shall be covered with a black shrink tube meeting UL 224 guidelines, Type V and rated 600V, minimum length 4 in. (100 mm) and with a minimum 1 in. (25 mm) coverage over the XLP insulation, underwater grade.”

Revise Article 817.05 of the Standard Specifications to read:

“Basis of Payment. The tracer cable shall be paid for separately as ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C per foot (meter), which price shall include all associated labor and material for installation.”

FULL-ACTUATED CONTROLLER IN EXISTING CABINET

Effective: September 26, 1995

Revised: November 1, 2023

857.01TS

Description.

This work shall consist of furnishing and installing a(n) " _____ " brand traffic actuated solid state digital controller meeting the requirements of the current District One Traffic Signal Special Provisions 857.02TS FULL-ACTUATED CONTROLLER AND CABINET and 857.02TS RAILROAD, FULL-ACTUATED CONTROLLER AND CABINET. This pay item shall include furnishing and installing the controller complete including malfunction management unit, load switches and flasher relays, and all necessary connections for proper operation.

Materials.

Add the following to Article 857.02 of the Standard Specifications:

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

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

Basis of Payment.

This work will be paid for at the contract unit price each for FULL-ACTUATED CONTROLLER IN EXISTING CABINET.

FULL-ACTUATED CONTROLLER AND CABINET

Effective: January 1, 2002

Revised: March 1, 2024

857.02TS

Description.

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

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

Materials.

Add the following to Article 857.02 of the Standard Specifications:

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

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

Revise Article 1074.03 (a) (5) paragraph “b.” to read:

“Thermostatically Controlled Exhaust Fans. The cabinet shall be equipped with two (2) thermostatically controlled exhaust fans. Each fan shall have a minimum air delivery capacity of 100 cfm (2.8 cu m/min) and shall be mounted on self-lubricating ball bearings. The thermostat control shall be adjustable between 91 and 113 °F (33 and 45 °C) and shall be set to turn the fan on at 95 °F (35 °C).”

Add the following to Article 1074.03 of the Standard Specifications:

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

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

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

Add the following to Article 1074.03 of the Standard Specifications:

- (b) (5) Cabinets – Provide 1/8 in. (3.2 mm) thick unpainted aluminum alloy 5052-H32. The surface shall be smooth, free of marks and scratches. All external hardware shall be stainless steel.
- (b) (6) Controller Harness – Provide a TS2 Type 2 “A” wired harness in addition to the TS2 Type 1 harness.
- (b) (7) Surge Protection – Shall be a 120 VAC Single phase Modular filter Plug-in type, supplied from an approved Vendor.
- (b) (8) BIU – shall be secured by mechanical means.
- (b) (9) Transfer Relays – Solid state or mechanical flash relays are acceptable.
- (b) (10) Switch Guards – All switches shall be guarded.
- (b) (11) Heating – One (1) 200 W, thermostatically-controlled, electric heater.
- (b) (12) Lighting – One (1) LED Panel shall be placed inside the cabinet top panel and one (1) LED Panel shall be placed on each side of the pull-out drawer/shelf

assembly located beneath the controller support shelf. The LED Panels shall be controlled by a door switch. The LED Panels shall be provided from an approved Vendor.

- (b) (13) The cabinet shall be equipped with a pull-out drawer/shelf assembly. A 1-1/2 in. (38mm) deep drawer shall be provided in the cabinet, mounted directly beneath the controller support shelf. The drawer shall have a hinged top cover and shall be capable of accommodating one (1) complete set of cabinet prints and manuals. This drawer shall support 50 lb (23 kg) in weight when fully extended. The drawer shall open and close smoothly. Drawer dimensions shall make maximum use of available depth offered by the controller shelf and be a minimum of 18 in. (610mm) wide.
- (b) (14) Plan & Wiring Diagrams – 12 in. x 15 in. (305mm x 406mm) moisture sealed container attached to door.
- (b) (15) Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle preemption and sixteen channels (16) of vehicular operation.
- (b) (16) Field Wiring Labels – All field wiring shall be labeled.
- (b) (17) Field Wiring Termination – Approved channel lugs required.
- (b) (18) Power Panel – Provide a nonconductive shield.
- (b) (19) Circuit Breaker – The circuit breaker shall be sized for the proposed load but shall not be rated less than 30 A.
- (b) (20) Police Door – Provide wiring and termination for plug in manual phase advance switch.

Basis of Payment.

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

GFCI 20 AMP DUPLEX RECEPTACLE

This work shall be in accordance with Sections 857 and 1074 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install a GFCI 20 Amp receptacle inside an existing traffic signal, lighting, or ITS cabinet.

The Department may request that the Contractor furnish a standard non-GFCI receptacle to be used to power equipment instead of a GFCI receptacle.

The Contractor shall replace the existing receptacle or wire in a new receptacle at the Department's request. The Contractor shall furnish an outlet box, wiring, and all materials required to install a new equipment receptacle in accordance with NEC requirements.

The Contractor shall remove the existing receptacle and dispose of it off site.

Basis of Payment: This work shall be paid for at the contract unit price per each for GFCI 20 AMP DUPLEX RECEPTACLE which price shall be payment in full for all labor, equipment, and materials required to furnish and install the duplex receptacle as described above, complete.

REMOVE AND REPLACE BATTERIES FOR UNINTERRUPTABLE POWER SUPPLY

Effective: November 1, 2023

862.03TS

Description.

Remove and Replace Batteries for Uninterruptable Power Supply (UPS) shall meet the requirements of Special Provision 862.01TS Uninterruptable Power Supply, Special for the batteries requirements including sizing, rating, and warranty. This item requires that the Contractor remove the existing batteries in the uninterruptable power supply and replace them with new batteries that provide a minimum of six (6) hours of full run- time operation.

The Contractor is responsible for modifying the existing uninterruptable power supply to make the cabinet and controller compatible for extra batteries if needed to ensure a minimum of six (6) hours of full run-time operation. Any connectors, wiring, seals, battery heating mats if needed shall be part of this pay item and included in the cost of this pay item. The Contractor is responsible for verifying that the existing battery heating mats are working properly and relocate these or replace with new heating mats as needed. This work shall also include properly cleaning of the inside of UPS cabinet of any battery acid residue or other debris to the satisfaction of the Engineer.

The existing batteries at an intersection shall be removed and recycled at an electronics recycling facility in an environmentally and properly way in meeting all applicable sections of US EPA and IL EPA publications along with the Code of Federal Regulations for transportation. Salvage value shall be included in the bid price.

All batteries in a UPS installation shall be the same type; mixing of gel cell and AGM types within a UPS installation is not permitted. All batteries shall have a clear label with the date it was manufactured and date it was installed inside a UPS.

Basis of Payment.

This work shall be paid for at the contract unit price each of all batteries in cabinet per intersection for REMOVE AND REPLACE BATTERIES FOR UNINTERRUPTABLE POWER SUPPLY, the price of which shall include the cost for all of the work and material described herein and includes furnishing, installing, and all mounting hardware necessary for proper operation to the satisfaction of the Traffic Engineer.

MASTER CONTROLLER

Effective: May 22, 2002

Revised: November 1, 2023

860.01TS

General.

This work shall consist of furnishing and installing a master controller, meeting the requirements of the current District One Traffic Signal Special Provisions 857.01TS FULL-ACTUATED CONTROLLER IN EXISTING CABINET, 857.02TS FULL-ACTUATED CONTROLLER AND CABINET, and 857.03TS RAILROAD, FULL-ACTUATED CONTROLLER AND CABINET, including all necessary connections for proper operation.

If the intersection is part of an existing system and/or when specified in the plans, this work shall consist of furnishing and installing a(n) " _____ " brand master controller.

Materials and Installation.

Revise Articles 860.02 and 860.03 of the Standard Specifications to read:

"Only controllers supplied by one of the District One approved vendors will be allowed. Only NEMA TS2 Type 1 Eagle/Yunex and Econolite closed loop systems shall be supplied. The latest approved model and software version of master controller shall be supplied.

Functional requirements in addition to those in Section 863 of the Standard Specifications include:

The system commands shall consist of, as a minimum, six (6) cycle lengths, five (5) offsets, three (3) splits, and four (4) special functions. The system commands shall also include commands for free or coordinated operation.

Traffic Responsive operation shall consist of the real time acquisition of system detector data, data validation, and the scaling of acquired volumes and occupancies in a deterministic fashion so as to cause the selection and implementation of the most suitable traffic plan.

Upon request by the Engineer, each master shall be delivered with up to three (3) complete sets of the latest edition of registered remote monitoring software with full manufacture's support. Each set shall consist of software on USB, or other suitable media approved by the Engineer, and a bound set of manuals containing loading and operating instruction. One copy of the software and support data shall be delivered to the Agency in charge of system operation, if other than IDOT. One of these two sets will be provided to the Agency Signal Maintenance Contractor for use in monitoring the system.

The Contractor shall arrange to install a cellular modem to the master controller. This shall be accomplished following the requirements contained in the current District One Traffic Signal Special Provision 892.01TS CELLULAR MODEM, as well as through the following process utilizing District One staff. An E911 address is required.

Full duplex communication between the master and its local controllers is recommended, but at this time not required. The data rate shall be 1200 baud minimum and shall be capable of speeds to 38,400 or above as technology allows. The controller, when installed in an Ethernet topology, may operate non-serial communications.

As soon as practical or within one week after the contract has been awarded, the Contractor shall contact the Traffic Signal Systems Engineer to request a SIM card. The SIM card will be provided by the Department. The Contractor shall provide the cellular modem model and International Mobile Equipment Identity (IMEI) value to the Department to complete the SIM card request.

The cellular modem shall be installed and activated one month before the system final inspection.

All costs associated with the cellular modem activation (not including installation) shall be paid for by the District One Business Services Section (i.e., this will be an IDOT phone number, not a Contractor phone number)."

Basis of Payment.

This work will be paid for at the contract unit price each for MASTER CONTROLLER or MASTER CONTROLLER (SPECIAL).

FIBER OPTIC CABLE

Effective: May 22, 2002

Revised: July 1, 2015

871.01TS

Add the following to Article 871.01 of the Standard Specifications:

The Fiber Optic cable shall be installed in conduit or as specified on the plans.

Add the following to Article 871.02 of the Standard Specifications:

The control cabinet distribution enclosure shall be 24 Port Fiber Wall Enclosure, unless otherwise indicated on plans. The fiber optic cable shall provide twelve fibers per tube for the amount of fibers called for in the Fiber Optic Cable pay item in the Contract. Fiber Optic cable may be gel filled or have an approved water blocking tape.

Add the following to Article 871.04 of the Standard Specifications:

A minimum of six multimode fibers from each cable shall be terminated with approved mechanical connectors at the distribution enclosure. Fibers not being used shall be labeled "spare." Fibers not attached to the distribution enclosure shall be capped.. A minimum of 13.0 feet (4m) of extra cable length shall be provided for controller cabinets. The controller cabinet extra cable length shall be stored as directed by the Engineer.

Add the following to Article 871.06 of the Standard Specifications:

The distribution enclosure and all connectors will be included in the cost of the fiber optic cable.

Testing shall be in accordance with Article 801.13(d). Electronic files of OTDR signature traces shall be provided in the Final project documentation with certification from the Contractor that attenuation of each fiber does not exceed 3.5 dB/km nominal at 850nm for multimode fiber and 0.4 bd/km nominal at 1300nm for single mode fiber.

SPLICE FIBER IN CABINET

Effective: November 1, 2023

871.02TS

Description.

This work shall consist of fusion splicing singlemode or multimode fibers in a field cabinet, inside a building, as shown on the plans and/or as directed by the Traffic Engineer.

General.

This pay item shall include splices between existing fiber optic cables and any splices shown on the plans as a bid item. Splices shall be secured in fiber optic splice trays within fiber optic distribution enclosures. All fusion splices shall be secured on aluminum splice trays capable of accommodating the required number of fusion splices, including necessary splice holders and a compatible splice tray cover. The tray dimensions shall not exceed 7.5" x 4.1" x 0.45" and shall be mounted within the enclosure using suitable hardware that allows removal for maintenance purposes without the use of tools. All individual splice trays shall be labelled. Splice trays shall be included in the unit cost of SPLICE FIBER IN CABINET.

The quality of all fiber splices shall be verified by testing and documentation according to Article 801.13(d) of the "Standard Specifications," to the satisfaction of the Traffic Engineer.

All optical fibers shall be spliced to provide continuous runs. Splices shall only be allowed in equipment cabinets, in buildings, as shown on the plans and/or as directed by the Traffic Engineer.

All splices shall be made using a fusion splicer that automatically positions the fibers using a system of light injection and detection. The Contractor shall provide all equipment and consumable supplies.

An OTDR trace and power meter readings must be provided from end point termination to end point termination for any fiber that is spliced.

Basis of Payment.

This work shall be paid for at the contract unit price per each for SPLICE FIBER IN CABINET. The unit price shall include all equipment; materials; fiber optic splice trays; testing and documentation; and labor required to fusion splice singlemode fiber optic cable. Splices involving new fiber optic cable installed under this contract, and any splices shown on the plans as an included item, shall be included in the unit cost of the applicable FIBER OPTIC CABLE of the type, size, and number of fibers specified.

TERMINATE FIBER IN CABINET

Effective: November 1, 2023

871.03TS

Description.

This work shall consist of terminating existing or new fibers in a field cabinet, inside a building, as shown on the plans and/or as directed by the Traffic Engineer.

General.

This pay item shall include splices between existing fiber optic cables and any splices shown on the plans as a bid item. All multimode connectors shall be LC compatible, with ceramic ferrules. Singlemode fiber terminations shall utilize pre-fabricated, factory-terminated (LC compatible with ceramic ferrules) pigtails fusion spliced to bare fibers. The splicing of pigtails for singlemode fibers is included in the cost of TERMINATE FIBER IN CABINET. The prefabricated pigtails shall have all of their fibers color coded to match the singlemode fibers in the fiber optic cable. All fusion splices shall be secured on aluminum splice trays capable of accommodating the required number of fusion splices, including necessary splice holders and a compatible splice tray cover. The tray dimensions shall not exceed 7.5" x 4.1" x 0.45" and shall be mounted within the enclosure using suitable hardware that allows removal for maintenance purposes without the use of tools. All individual splice trays shall be labelled. Splice trays and connector bulkheads shall be included in the cost of TERMINATE FIBER IN CABINET. Connector bulkheads shall be the proper type for the fiber enclosure at the location, and shall be properly secured to the enclosure.

The quality of all fiber splices and terminations shall be verified by OTDR and power meter testing and documented according to Article 801.13(d) of the "Standard Specifications," to the satisfaction of the Traffic Engineer.

All bulkhead connectors / adapters shall be labeled with the fiber numbers and direction (i.e. 13-14N, 1-2W, etc.) with a laminated machine printed label.

Basis of Payment.

This work will be paid for at the contract unit price per each for TERMINATE FIBER IN CABINET, The unit price shall include all equipment; materials; connectors; pigtails; splice trays; bulkheads; testing and documentation; and labor required to terminating each required multimode or singlemode fiber. Terminations involving new fiber optic cable installed under this contract, including any terminations shown on the plans as an included item, shall be included in the unit cost of the applicable FIBER OPTIC CABLE of the type, size, and number of fibers specified.

UNINTERRUPTABLE POWER SUPPLY, SPECIAL

Effective: January 1, 2013

Revised: March 1, 2024

862.01TS

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

Add the following to Article 862.01 of the Standard Specifications:

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

Add the following to Article 862.02 of the Standard Specifications:

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

Add the following to Article 862.03 of the Standard Specifications:

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

Revise Article 862.04 of the Standard Specifications to read:

Installation.

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

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

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

For a ground mounted UPS, the UPS shall be mounted on its own Type A concrete foundation which will be paid for separately. A concrete apron shall be provided with a dimension of 36 in. in front of the UPS cabinet, 5 in. deep, and a width sized appropriately to the width of the concrete foundation. The concrete apron shall follow Articles 424 and 202 of the Standard Specifications.

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

Materials.

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

“The UPS shall be line interactive or double conversion and provide voltage regulation and power conditioning when utilizing utility power. The UPS shall be sized appropriately for the intersection(s) normal traffic signal operating load. The UPS must be able to maintain the intersection’s normal operating load plus 20 percent of the intersection’s normal operating load. When installed at a railroad-interconnected intersection, the UPS must maintain the railroad preemption load, plus 20 percent of the railroad preemption-operating load. The total connected traffic signal load shall not exceed the published ratings for the UPS. The UPS shall provide a minimum of six (6) hours of normal operation run-time for signalized intersections with LED type signal head optics at 77 °F (25 °C) (minimum 1000 W active output capacity, with 86 percent minimum inverter efficiency).”

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

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

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

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

Revise Article 1074.04(b)(2) paragraph “b.” of the Standard Specifications to read:

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

Revise Article 1074.04(b)(2) paragraph “c.” of the Standard Specifications to read:

“No more than three (3) batteries shall be mounted on individual shelves for a cabinet housing six batteries and no more than four (4) batteries per shelf for a cabinet housing eight batteries.”

Revise Article 1074.04(b)(2) paragraph “e.” of the Standard Specifications to read:

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

Revise Article 1074.04(b)(2) paragraph “g.” of the Standard Specifications to read:

“The door shall open to the entire cabinet, have a neoprene gasket, an Aluminum continuous piano hinge with stainless steel pin, and a three point locking system. The door shall be equipped with a two position doorstop, one a 90° and one at 120°. The cabinet shall be provided with a main door lock which shall operate with a traffic industry conventional No. 2 key. Provisions for padlocking the door shall be provided.”

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

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

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

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

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

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

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

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

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

- (9) The UPS shall consist of an even number of batteries that are capable of maintaining normal operation of the signalized intersection for a minimum of six (6) hours. Calculations shall be provided showing the number of batteries of the type supplied that are needed to satisfy this requirement. A minimum of four (4) batteries shall be provided.
- (10) Battery heater mats shall be provided when gel cell type batteries are supplied.

Add the following to Article 1074.04 of the Standard Specifications:

- (e) Warranty. The warranty for an uninterruptable power supply (UPS) and batteries (full replacement) shall cover a minimum of five (5) years from date the equipment is placed in operation.
- (f) Installation. Bypass switch shall completely disconnect the traffic signal cabinet from the utility provider.
- (g) The UPS shall be set-up to run the traffic signal continuously without going to a red flashing condition when switched to battery power unless otherwise directed by the Engineer. The Contractor shall confirm set-up with the Engineer. The continuous operation mode when switched to battery may require modification to unit connections and these modifications are included in the unit price for this item.

Revise Article 862.04 of the Standard Specifications to read:

Basis of Payment.

This work will be paid for at the Contract unit price per each for UNINTERRUPTABLE POWER SUPPLY, SPECIAL, UNINTERRUPTABLE POWER SUPPLY, GROUND MOUNTED, or UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL. Replacement of emergency vehicle priority system confirmation beacons and any required modifications to the traffic signal controller shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY, SPECIAL, UNINTERRUPTABLE POWER SUPPLY, GROUND MOUNTED, or UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL item. The concrete apron and earth excavation required shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY, GROUND MOUNTED or UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL item.

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.

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

Effective: January 1, 2013

Revised: July 1, 2015

873.03TS

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

Basis of Payment.

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

TRAFFIC SIGNAL POST

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

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

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

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

Traffic signal post shall be painted black.

MAST ARM ASSEMBLY AND POLE

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

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

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

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

The mast arm assembly and pole shall be painted black.

CONCRETE FOUNDATIONS

Effective: May 22, 2002

Revised: March 1, 2024

878.01TS

Add the following to Article 878.03 of the Standard Specifications:

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

Depending on the foundation type, the top of foundation shall be between 1 in. and 6 in. above finished grade or as directed by the Engineer.

No foundation is to be poured until the Resident Engineer gives their approval as to the depth of the foundation.”

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

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

Revise the first paragraph of Article 878.05 of the Standard Specifications to read:

“Basis of Payment. This work will be paid for at the Contract unit price per foot (meter) of depth of CONCRETE FOUNDATION of the type specified, or CONCRETE FOUNDATION, TYPE A 12-INCH DIAMETER for pedestrian post concrete foundations.”

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

Effective: May 22, 2002

Revised: March 1, 2024

880.01TS

Materials.

Add the following to Section 1078 of the Standard Specifications:

“LED modules proposed for use and not previously approved by IDOT District One will require independent testing for compliance to current VTC SH-ITE standards for the product and be Intertek ETL Verified. This would include modules from new Vendors and new models from IDOT District One approved Vendors.

The proposed independent testing facility shall be approved by IDOT District One. Independent testing must include a minimum of two (2) randomly selected modules of each type of module (i.e. ball, arrow, pedestrian, etc.) used in the District and include as a minimum Luminous Intensity and Chromaticity tests. However, complete module performance verification testing may be required by the Engineer to assure the accuracy of the Vendor’s published data and previous test results. An IDOT representative will select sample modules from the local warehouse and mark the modules for testing. Independent test results shall meet current ITE standards and vendor’s published data. Any module failures shall require retesting of the module type. All costs associated with the selection of sample modules, testing, reporting, and

retesting, if applicable, shall be the responsibility of the LED module Vendor and not be a cost to this Contract.

All signal heads shall provide 12 in. (300 mm) displays with glossy yellow or black polycarbonate housings. All head housings shall be the same color (yellow or black) at the intersection. For new signalized intersections and existing signalized intersections where all signals heads are being replaced, the proposed head housings shall be black. Where only selected heads are being replaced, the proposed head housing color (yellow or black) shall match existing head housings. Connecting hardware and mounting brackets shall be polycarbonate (black). A corrosion resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints and shall be visible to the inspector at the signal turn-on. Post top mounting collars are required on all posts and shall be constructed of the same material as the brackets.

The LED signal modules shall be replaced or repaired if an LED signal module fails to function as intended due to workmanship or material defects. LED signal modules which exhibit luminous intensities less than the minimum values specified in Table 1 of the ITE Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Circular Signal Supplement (June 27, 2005) [VTCSH], or applicable successor ITE specifications, or show signs of entrance of moisture or contaminants, shall be replaced or repaired. The Vendor's written warranty for the LED signal modules shall be dated, signed by a Vendor's representative, and included in the product submittal to the State. See Article 801.14 of the Standard Specifications for warranty information.

(a) Physical and Mechanical Requirements

(1) Modules can be manufactured under this specification for the following faces:

- a. 12 in. (300 mm) circular, multi-section
- b. 12 in. (300 mm) arrow, multi-section

(2) The maximum weight of a module shall be 4 lb (1.8 kg).

(3) Each module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.) and shall be weatherproof after installation and connection.

(4) The lens of the module shall be tinted with a wavelength-matched color to reduce sun phantom effect and enhance on/off contrast. The tinting shall be uniform across the lens face. Polymeric lens shall provide a surface coating or chemical surface treatment applied to provide abrasion resistance. The lens of the module shall be integral to the unit, convex with a smooth outer surface and made of plastic. The lens shall have a textured surface to reduce glare.

(5) The use of tinting or other materials to enhance ON/OFF contrasts shall not affect chromaticity and shall be uniform across the face of the lens.

(6) Each module shall have a symbol of the type of module (i.e. circle, arrow, etc.) in the color of the module. The symbol shall be 1 in. (25.4 mm) in diameter. Additionally, the color shall be written out in 1/2 in. (12.7mm) letters next to the symbol.

(b) Photometric Requirements

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

(c) Electrical

(1) Maximum power consumption for LED modules as per the tables in Article 1078.01.

(2) Operating voltage of the modules shall be 120 VAC. All parameters shall be measured at this voltage.

(3) The modules shall be operationally compatible with currently used controller assemblies (solid state load switches, flashers, and conflict monitors).

(4) When a current of 20 mA AC or less is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.

(5) The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.

(6) LED arrows shall be wired such that a loss or the failure of one or more LEDs

(d) Retrofit Traffic Signal Module

The following specification requirements apply to the Retrofit module only. All general specifications apply unless specifically superseded in this section.

(1) Retrofit modules can be manufactured under this specification for the following faces:

- a. 12 in. (300 mm) circular, multi-section
- b. 12 in. (300 mm) arrow, multi-section

(2) Each Retrofit module shall be designed to be installed in the doorframe of a standard traffic signal housing. The Retrofit module shall be sealed in the doorframe with a one-piece EPDM (ethylene propylene rubber) gasket.

(3) The maximum weight of a Retrofit module shall be 4 lb (1.8 kg).

(4) Each Retrofit module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.) and shall be weatherproof after installation and connection.

(5) Electrical conductors for modules, including Retrofit modules, shall be 39-2/5 in. (1 m) in length, with quick disconnect terminals attached.

(6) The lens of the Retrofit module shall be integral to the unit, shall be convex with a smooth outer surface and made of plastic or of glass.

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

(1) The arrow module shall meet specifications stated in Section 9.01 of the Equipment and Material Standards of the Institute of Transportation Engineers (November 1998) [ITE Standards], Chapter 2 (Vehicle Traffic Control Signal Heads) or applicable successor ITE specifications for arrow indications.

(2) The LEDs arrow indication shall be a solid display with a minimum of three (3) outlining rows of LEDs and at least one (1) fill row of LEDs.

(f) The following specification requirement applies to the 12 in. (300 mm) programmed visibility (PV) module only. All general specifications apply unless specifically superseded in this section.

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

Delete the fourth paragraph of Article 880.03 of the Standard Specifications. Refer to the "Bagging Signal Heads" section of the District 1 Traffic Signal Special Provision 800.01TS TRAFFIC SIGNAL GENERAL REQUIREMENTS."

Basis of Payment.

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

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

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

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

LED SIGNAL FACE, LENS COVER

Effective: July 1, 2021

Revised: April 1, 2024

880.03TS

Description.

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

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

The snow resistant signal head lens cover shall be warrantied for a period of three (3) years from final inspection and shall be free from material and workmanship defects.

Basis of Payment.

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

LIGHT EMITTING DIODE (LED) PEDESTRIAN SIGNAL HEAD

Effective: May 22, 2002

Revised: March 1, 2024

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 shall be permitted.”

Delete the fourth paragraph of Article 881.03 of the Standard Specifications. Refer to the “Bagging Signal Heads” section of the District 1 Traffic Signal Special Provision 800.01TS TRAFFIC SIGNAL GENERAL REQUIREMENTS.

Add the following to Article 881.03 of the Standard Specifications:

“Pedestrian Countdown Signal Heads shall be 16 in. (406mm) x 18 in. (457mm) 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.

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 in. (229mm) in height and easily identified from a distance of 120 ft (36.6m).”

Materials.

Add the following to Article 1078.02 of the Standard Specifications:

“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. The module shall not have user accessible switches or controls for modification of cycle.

At power on, the module shall enter a single automatic learning cycle. During the automatic learning cycle, the countdown display shall remain dark.

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.

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.

If the controller preempts during the flashing Upraised Hand, the countdown will continue to count down without interruption.

The next cycle following the preemption event shall use the correct, initially programmed values.

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.

The digits will go dark for one pedestrian cycle after loss of power of more than 1.5 seconds.

The countdown numerals shall be two (2) "7 segment" digits forming the time display utilizing two rows of LEDs.

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.

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.

In the event of a power outage, light output from the LED modules shall cease instantaneously.

The LEDs utilized in the modules shall be AllnGaP technology for Portland Orange (Countdown Numerals and Upraised Hand) and GaN technology for Lunar White (Walking Person) indications.

The individual LEDs shall be wired such that a loss or the failure of one or more LED will not result in the loss of the entire module.

See Article 801.14 of the Standard Specifications for warranty information."

Basis of Payment.

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

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

Add the following to Article 881.04 of the Standard Specifications:

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

TRAFFIC SIGNAL BACKPLATE

Effective: May 22, 2002

Revised: March 1, 2024

882.01TS

Revise the first sentence of Article 1078.03 of the Standard Specifications to read:

“All backplates shall be louvered and made of formed ABS plastic or composite aluminum.”

Revise the first sentence of the second paragraph of Article 1078.03 of the Standard Specifications to read:

“The backplate shall be composed of one or two pieces.”

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

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

“When retro reflective sheeting is specified, it shall be Type ZZ sheeting according to Article 1091.03 and applied in preferred orientation for the maximum angularity according to the vendor’s recommendations. The retroreflective sheeting shall be installed under a controlled environment by the Manufacturer/Vendor before shipment to the Contractor. The formed plastic backplate shall be prepared and cleaned, following recommendations of the retroreflective sheeting Manufacturer.”

DETECTOR LOOP

Effective: May 22, 2002

Revised: March 1, 2024

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 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 plans.

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 waterproof tag secured to each wire with nylon ties.

Resistance to ground shall be a minimum of 500 mega-ohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries.

- (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 in. (6.3 mm) deep x 4 in. (100 mm) saw cut to mark the 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 in. (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:
 - (1) 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.
 - (2) 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.
 - (3) 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 a minimum 5/8 in. (16 mm) outside diameter, minimum 3/8 in. (9.5 mm) inside diameter 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. The 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 ensure 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 ensure complete moisture blockage and further protect the wire. The preformed

loops shall be constructed to allow a minimum of 6-1/2 ft of extra cable in the handhole.”

Method of Measurement.

Add the following to Article 886.05 of the Standard Specifications:

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

Basis of Payment.

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

EMERGENCY VEHICLE PRIORITY SYSTEM

Effective: May 22, 2002

Revised: July 1, 2015

887.01TS

Revise Section 887 of the Standard Specifications to read:

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

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

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

The light detector and amplifier shall be of TOMAR brand to meet City of Evanston standard.

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

Basis of Payment.

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

ACCESSIBLE PEDESTRIAN SIGNALS

Effective: April 1, 2003

Revised: November 1, 2023

888.02TS

Description. This work shall consist of furnishing and installing accessible pedestrian signals (APS). Each APS shall consist of an interactive vibrotactile pedestrian pushbutton with speaker, an informational sign, a light emitting diode (LED) indicator light, a solid-state electronic control board, a power supply, wiring, and mounting hardware. The APS shall meet the requirements of the MUTCD and Sections 801 and 888 of the Standard Specifications, except as modified herein.

Add the following to Article 888.03 of the Standard Specifications:

A mounting bracket and/or extension shall be used to assure proper orientation and accessibility where needed. 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 to meet mounting requirements.

Add the following to Article 1074.02(e) of the Standard Specifications:

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 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. Stations shall be powder coated yellow with a black pushbutton and stainless steel arrow on pushbutton.

Electrical Requirements. The APS shall operate with systems providing 95 to 130 VAC, 60 Hz and throughout an ambient air temperature range of -29 to +160 °F (-34 to +70 °C).

The APS shall contain a power protection circuit consisting of both fuse and transient protection.

Audible Indications. A pushbutton locator tone shall sound at each pushbutton and shall be deactivated during the associated walk indication and when associated traffic signals are in flashing mode. Pushbutton locator tones shall have a duration of 0.15 seconds or less and shall repeat at 1-second intervals. Each actuation of the pushbutton shall be accompanied by the speech message "Wait". Locator tones shall be audible 6 to 12 ft from pushbutton.

If two accessible pedestrian pushbuttons are placed less than 10 ft apart or placed on the same pole, the audible walk and don't walk indication shall be a speech message. This speech

message shall sound throughout the WALK interval only. Common street name shall be used and not the route number of the street unless there is no common street name. The street name used in programming shall reflect the street name mast arm mounted sign panel. Locations without street name (ex. private benefit driveways, shopping plaza entrance, etc.) shall use a general term "Commercial Driveway" as a street name for that leg. The speech message shall be modeled after: "Street Name.' Walk Sign is on to cross "Street Name.'" For signalized intersections utilizing exclusive pedestrian phasing, the verbal message shall be "Walk sign is on for all crossings". In addition, a speech pushbutton information message shall be provided by actuating the APS pushbutton during DON'T WALK interval. This verbal message shall be modeled after: "Wait". The extended press option verbal message shall be: "Wait to cross 'Street Name' at 'Street Name'".

Railroad Preemption.

At locations with railroad interconnection APS pushbutton shall be capable of receiving a railroad preemption similar to a traffic signal controller and shall be hard wired to the railroad preemption relay inside the traffic signal cabinet. A shelf mount control unit shall be provided and installed inside the cabinet capable of receiving and transmitting the railroad preemption to all the push buttons.

At railroad intersections all APS pushbuttons shall use the speech message and shall follow the below speech models.

During Don't Walk: "Wait to cross 'Street Name' at 'Street Name', Caution, Walk time shortened when train approaches" – this does not repeat, plays only once with every push button press.

During Walk: "Walk sign is on to cross 'Street Name', – this repeats as many times as possible during Walk interval only.

During Railroad preemption: All push buttons at same time "Train Approaching" – this message shall be repeated two times.

At locations with emergency vehicle preemption, NO additional speech message shall be provided.

At locations with Equestrian Pushbuttons style installation the APS push buttons shall use speech message only and shall emit the audible message from the bottom mounted push button only.

Locations with Corner Islands or Center Medians

At locations with corner islands pushbuttons shall follow the requirement of the 10 ft as specified herein regarding the percussive tone vs a speech message. When push buttons are closer than 10 ft apart the speech message shall follow the format specified herein for the main street crossing. The speech message shall follow the below speech models for the unusual configurations.

Crossing of the right turn lane from or to Corner Island: "Wait to cross right turn lane for 'Street Name' at 'Street Name' crosswalks" and "Walk sign is on to cross right turn lane for 'Street Name' at 'Street Name' crosswalks"

Crossing from Corner Island to Corner Island where second pushbutton actuation is required: "Wait to cross 'Street Name' at 'Street Name' to median with second pushbutton" and "Walk sign is on to cross 'Street Name' to median with second pushbutton"

Center Medians on a divided highways with push buttons will require pushbutton to have a dual arrow on the pushbutton.

Where two accessible pedestrian pushbuttons are separated by 10 ft or more, the walk indication shall be an audible percussive tone. It shall repeat at 8 to 10 ticks per second with a dominant frequency of 880 Hz. Percussive tone shall be uniform at all stations at the intersection and shall not change for different directions.

Automatic volume adjustments in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA. Locator tone and verbal messages shall be no more than 5 dB louder than ambient sound. Locator tone and speech message shall be programmed at same volume one shall not be significantly louder than the other and shall be adjusted as directed by the Engineer.

Pedestrian Pushbutton. Pedestrian pushbuttons shall be at least 2 in. (50 mm) in diameter or width. The force required to activate the pushbutton shall be no greater than 3.5 lb (15.5 N).

A red LED shall be located on or near the pushbutton which, when activated, acknowledges the pedestrians request to cross the street.

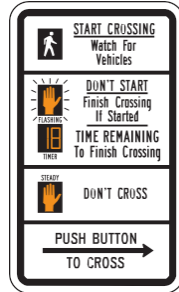
APS pushbutton systems that utilize any wireless technology including Bluetooth technology to place calls or communicate with controller will not be allow. A central master control unit shall be provided and installed in the traffic signal cabinet. Push button shall be connected directly to the master control unit in the traffic signal cabinet using only 2 wires. All pushbuttons shall be capable of placing a pedestrian call request into the controller and shall be hard wired. APS pushbuttons shall be a direct replacement of existing standard push buttons and shall be weather resistant with a minimum warranty of 5 years.

APS push buttons shall be compatible with one another and easily replaceable on future replacements or maintenance repairs no multiple model variations will be allowed.

All APS pushbuttons shall come with the messages pre-programmed for each particular intersection regardless of the location or the 10 ft separation. Final field adjustments including percussive tone vs speech message use shall be completed once push buttons are installed in the final location. All push buttons shall be programmed with the appropriate parameters and settings as directed by the Engineer. These settings shall be standard for all pushbuttons and will vary based on the manufacturer. Access to pushbutton settings shall be provided through an app either through wired, wireless, or Bluetooth connection. Pushbutton information, settings, and access instructions shall all be provided in a weatherproof pouch and safely stored inside each traffic signal cabinet.

Contractor shall remove any existing pedestrian isolation boards, field wire terminals, and any wires to the board when easily accessible. If the pedestrian isolation board has been installed from the factory on the back panel of the cabinet, contractor is to disconnect the power to the isolation board and any wires while leaving the board mounted. This work shall be included in the cost of Accessible Pedestrian Signals and will not be paid for separately.

Signage. A sign shall be located immediately above the pedestrian pushbutton and parallel to the crosswalk controlled by the pushbutton. The sign shall conform to the following standard MUTCD design: R10-3e.



R10-3E

Tactile Arrow. A tactile arrow, pointing in the direction of travel controlled by a pushbutton, shall be provided on the pushbutton.

Vibrotactile Feature. The pushbutton shall pulse when depressed and shall vibrate continuously throughout the WALK interval.

Basis of Payment. This work will be paid for at the contract unit price per each for ACCESSIBLE PEDESTRIAN SIGNALS and shall include furnishing, installation, mounting hardware including extension brackets if required, and programming of the push button.

TEMPORARY TRAFFIC SIGNAL INSTALLATION

Effective: May 22, 2002

Revised: March 1, 2024

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. When temporary traffic signals will be operating within a traffic signal system, the equipment shall be compatible with the current operating requirements of the system. For integration into an Advanced Traffic Management System (ATMS) such as Centrac, Tactics, or TransSuite, the controller shall have the latest version of approved NTCIP software installed.

General.

Only an approved controller Vendor will be allowed to assemble a 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. Only controllers supplied by one of the District approved Vendors 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 250 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. 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, or as specified in the Contract.
- (b) Cabinets. Only control equipment, including controller cabinet and peripheral equipment, supplied by one of the District approved Vendors 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 Contract. All temporary traffic signal cabinets shall have a closed bottom. The bottom shall be sealed along the entire perimeter of the cabinet base to ensure a water, dust, animal, and insect-proof seal. The bottom shall provide a minimum of two (2) 4 in. (100 mm) diameter holes to run the electric cables through. The 4 in. (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 "Grounding of Traffic Signal Systems" section of 800.01TS TRAFFIC SIGNAL GENERAL REQUIREMENTS special provision.
- (d) Traffic Signal Heads. All traffic signal sections shall be 12 in. (300 mm). Pedestrian signal sections shall be 16 in. (406mm) x 18 in. (457mm). All signal heads shall be furnished with tunnel visors unless otherwise specified in the contract. Traffic signal sections shall be Light Emitting Diode (LED) with expandable view, unless otherwise approved by the Engineer. Pedestrian signal heads shall be LED Pedestrian Countdown Signal Heads. 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 Contract. If the Contract specifies fiber optic cable to be used for temporary interconnect, the Contractor may request, in writing, to substitute the fiber optic temporary interconnect 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. If the existing traffic signal has a cellular modem, the modem shall be temporarily relocated to the temporary signal. The temporary signal cabinet shall have an antenna supplied by the Contractor. Any existing network switches shall be temporarily relocated to the temporary signal. Any existing pan-tilt-zoom (PTZ) cameras shall be temporarily relocated to the temporary signal. 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. The temporary traffic signal interconnect shall maintain interconnect communications throughout the entire signal system for the duration of the project.
- (3) Temporary wireless interconnect for closed-loop systems. The radio interconnect system shall be compatible with Eagle/Yunex 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. Maximum 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 with the Vendor's recommendations.

Temporary wireless interconnect for Advanced Traffic Management Systems. The radio interconnect system shall be compatible with an ATMS.

- (f) Emergency Vehicle Preemption. 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. Video vehicle detection systems shall be approved by IDOT prior to the Contractor furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the video vehicle detection system in accordance to the Manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project. The Vendor shall be present and assist the contractor in setting up the 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) Pedestrian push-buttons. Pedestrian push-buttons shall be provided for all pedestrian signal heads/phases or as directed by the Engineer. Accessible Pedestrian Signal (APS) buttons shall be installed at any location where they currently exist. All push-buttons shall be latching and have MUTCD R10-3e signs with proper arrows.
- (i) Uninterruptable Power Supply. All temporary traffic signal installations shall have an 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 the current District One Traffic Signal Special Provision 862.01TS UNINTERRUPTABLE POWER SUPPLY, SPECIAL.

- (j) Signs. All existing signs shall be removed from existing poles and relocated to the temporary signal. 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 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 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 the Contractor shall furnish reflectorized street name signs on the temporary traffic signal installation.
- (k) 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.
- (l) Maintenance.
 - (1) Maintenance shall meet the requirements of the Standard Specifications and the "Maintenance and Responsibility of Traffic Signal and Flashing Beacon Installations" section of the current District One Traffic Signal Special Provision 800.01TS TRAFFIC SIGNAL GENERAL REQUIREMENTS.
 - (2) 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 they begin any physical work on the Contract or any portion thereof.
 - (3) The temporary signal responsibility shall begin at the start of temporary signal construction and shall end with the removal of the signal as directed by the Engineer.
- (m) 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 Contract. 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 ft (5.5m) on temporary wood poles (Class 5 or better) of 45 ft (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. A video vehicle detection system may be used in place of detector loops as approved by the Engineer or as shown in the Contract.
- (n) 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 twelve (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 ft (5 m) 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 ft (2.5 m) 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 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, video vehicle detection systems, any

maintenance or adjustment to the 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 location will be paid for separately.

TEMPORARY TRAFFIC SIGNAL TIMING

Effective: May 22, 2002

Revised: March 1, 2024

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 Traffic Signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer for a listing of approved Consultants.

The following tasks are associated with TEMPORARY TRAFFIC SIGNAL TIMING:

- (a) Consultant shall attend temporary traffic signal inspection (turn-on) and/or detour meeting and conduct on-site implementation of the traffic signal timings.
- (b) Consultant shall be responsible for making fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
- (c) Consultant shall provide monthly observation of traffic signal operations in the field.
- (d) Consultant shall provide on-site consultation and adjust timings as necessary for construction stage changes, temporary traffic signal phase changes, and any other conditions affecting timing and phasing, including lane closures, detours, and other construction activities.
- (e) Consultant shall make timing adjustments and prepare comment responses as directed by the Area Traffic Signal Maintenance and Operations Engineer.
- (f) Return original timing plan once construction is complete.

Basis of Payment.

The work 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.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

Effective: May 22, 2002

Revised: March 1, 2024

895.02TS

Add the following to Article 895.05 of the Standard Specifications:

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

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

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

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

LED LAMP MODULE REPLACEMENT

This work shall be in accordance with Sections 880, 895, and 1078 of the Standard Specifications, except as modified herein.

The Contractor shall remove non-functioning LED modules from an existing traffic signal head and furnish and install new LED lamp modules for each indication as requested by the Department. The Contractor shall recycle all LED modules at a certified electronics recycling facility.

The LED lamp module will be replaced in kind for whatever color and movement is being replaced (R, Y, G, Ped, Walk, Don't Walk, etc.).

Basis of Payment: This work will be paid for at the contract unit price per EACH for LED LAMP MODULE REPLACEMENT, which prices includes all labor, equipment, and materials to complete this work.

REMOVE TEMPORARY WOOD POLE

Description. This item shall consist of removing and disposing of a temporary wood pole at the location shown on the drawings.

Requirements. Removal of the temporary wood pole. Removal of the luminaires and mast arms are not part of this work. The Contractor shall be responsible for removing all equipment and material related to the temporary wood pole off site and properly dispose of.

All proposed intersection and roadway lighting shall be installed and operational before any temporary lighting and can be removed.

Measurement and Payment. The work shall be paid for at the contract unit price each for REMOVE TEMPORARY WOOD POLE, 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.

ADJUSTING FRAMES AND GRATES OF DRAINAGE AND UTILITY STRUCTURES

Delete Article 603.08 and replace it with the following:

“603.08 Adjusting Rings. Drainage and utility structure frames shall be adjusted to grade by removal of the frame and adjustment from the structure, preparing the top of the structure to receive the new adjustment, installing the proper height precast concrete adjusting rings and reinstalling the frame, all in accordance with applicable provisions of Section 602. The use of cast iron adjusting rings is prohibited.”

ADJUSTING WATER SERVICE LINES

Add the following subparagraphs to Article 563.01.

“ Water Service Line Disconnection and Replacement. Work under the Payment Item “ADJUSTING WATER SERVICES” shall consist of rerouting the existing water service lines because of new sewer installation using new service pipe, fittings, and couplings as necessary. The Contractor shall make every reasonable effort to protect existing services. In some locations, however, it may be necessary to reroute services. Where approved by the Engineer, the Contractor may remove and reroute water services within trench lines to provide adequate clearance from new facilities. The existing water services shall be cut at both sides of the trench for the proposed sewer pipe, and replaced by new copper service lines which shall be connected to the existing water lines adjacent to or above the proposed sewer pipe or as directed by the Engineer. No reconnection joints shall be located directly above or below the proposed sewer. The City system contains a range of service sizes and materials. The Contractor shall maintain a suitable inventory of proper service piping and fittings so as to minimize the time required for making re-connections.

Add the following subparagraphs to Article 563.02 - Materials.

Water Service Line Reconnection

- (i.) Service pipe and system components. Material shall be as specified in Section 562
- (ii.) Water Service Line Sleeve. Sleeves for water service lines shall be Schedule 40 PVC pipe conforming to ASTM D-1785.

Shop drawings for system components shall be submitted for approval as soon as possible, but not less than thirty (30) calendar days prior to the time when the components are intended to be installed.”

Add the following paragraph to Article 563.03:

“If the Contractor damages any sanitary service line not requiring adjustment, or any other underground structure or utility, he shall replace or repair it as required by the Engineer and no additional compensation will be allowed. When a sanitary sewer is to be adjusted, the Contractor shall remove it carefully to prevent damage to the existing pipe which will remain.”

Add the following paragraphs to Article 563.05:

“The Contractor shall take all precautions to keep the existing and new water service line clean from all debris and shall flush the new copper service line prior to reconnecting to the existing service. After each service is connected, the Contractor shall verify that the water service is supplying adequate water. The Contractor will be charged for any labor and materials used by the Water Department to correct any problems that arise due to Contractor's efforts.

All water services, which pass below or within 18 inches above combined, storm, sanitary, and relief sewers and services, shall be sleeved using a PVC casing pipe. The water service sleeve shall be of adequate diameter to accommodate the copper water service line and shall extend a minimum of 10 feet either side of the sewer. The ends of the PVC casing pipe shall be sealed with class SI concrete or as approved by Engineer.”

Adjustments shall be paid for at the Contract unit price per EACH for ADJUSTING WATER SERVICES up to 2 inches in diameter; SLEEVES FOR ADJUSTING WATER SERVICES, and ADJUSTING SANITARY SEWER SERVICE up to 8 inches in diameter; measured in the field.

These Contract unit prices shall be payment in full for all materials, labor and equipment required for: site preparation; the cost of all joint materials; all connections; excavation; disposal of excess excavated materials; bedding; installation, including connections to existing systems; backfill placement, compaction and compaction testing; machine tapping of holes into pipe; system components, including wyes, tees, adapters, couplings, bends, concrete encasement, service line sleeves, pipes and tubing; testing; correction of defects; and other related work required to complete the installation which is not included under other Payment Items. The Contractor is advised that specific liquidated damages apply to disruptions of individual water and sanitary services as indicated in Bid Form of Contract Documents.

These items shall not include the cost of pavement, sidewalk, driveway, and curb/gutter removal and disposal within the pay limits shown on the Drawings. Roadway, sidewalk, driveway, and curb/gutter removal/ replacement within pay limits or as directed by the Engineer shall be paid for in accordance with the appropriate Pay Items.

Roadway, sidewalk, driveway, and curb/gutter removal/replacement outside the pay limits shown on the Drawings required for completion of the Work or for Contractor's purposes shall be incidental to combined sewer, relief sewer, storm sewer, and sanitary sewer construction and no separate payment shall be made.

BENCHES

Description. This work shall consist of furnishing and installing benches at the locations specified in the Contract plans or as directed by the Engineer.

General Requirements. Each bench will be placed at the location indicated in the plans. The locations will be field marked and verified for approval by the Engineer.

ASSEMBLY

Anchor bolts must be located with assembled bench in place. Benches must be mounted as detailed in the plans. Anchor bolts must be drilled and grouted into the concrete base for pavers, concrete wearing surface or concrete sidewalk. Once installed, anchor bolts must be field painted to match bench color/gloss.

MATERIALS

Materials must be as specified in the plans and must be "Gloss Black" in color, Standard 6 Foot Length with Center Armrest by the following suggested manufacturers:

Victor Stanley, Inc.
Wausau Tile, Inc.
Trystan, Inc.

BENCH, TYPE B (6') should be similar to the Victor Stanley Model "Ribbon Series RB-28 Special 6' Bench"

FINISH- Finish must be powder coating or similar coating process.

SUBMITTALS

Submit manufacturer's technical data for each manufactured product, including certification that each product complies with the specified requirements. In accordance with the Standard Specifications, the Contractor must submit shop drawings for the Engineer's approval showing the bench completely assembled including shop drawings of its component parts. Submit color sample.

Method of Measurement. BENCHES will be measured in place per each unit installed.

Basis of Payment. The work under this item will be paid for at the contract unit price per each BENCHES, which price will include labor, anchor bolts and bolt installation, equipment, materials and incidental work necessary to complete the installation as specified.

BICYCLE RACKS

Description. This item shall consist of furnishing and installing new bicycle racks.

General Requirements. Contractor is responsible for furnishing and installing of new bike racks according to the standard details in the construction plans, and for any damage incurred to racks during installation.

RACK: To be as specified in the detail drawings.

Materials. Bicycle Rack - The bicycle rack must be fabricated from square Domestic (U.S. manufactured) Steel tubing, in accordance with ASTM A500 Grade B, 2" X 2" in size with 0.25" wall mechanical and structural mild steel tubing. The tubing must be bent in a one piece width as shown on the contract documents. The bicycle racks must not be welded in sections. Only the base plate must be welded to the steel tubing by using stainless steel A.C.D.C. 309L 16 or 17 electrode rod for welding. Color of the coating must be "Gloss Black".

The coating must be applied only after the bicycle rack has been fabricated.

The final product will be rejected if the coating cracks, ripples in the curved areas or is otherwise damaged due to the fabrication and/or shipping.

Fastener-Expansion anchor to be stainless steel mushroom head spike, 1/2" x 4", as per manufacturer's recommendations.

Base plates - Base plates must be fabricated from Domestic (U.S. manufactured) Stainless Steel, 3/8" thick, in accordance with ASTM-T-304.

Coating of Bicycle Rack

Steel:

Shot blast to near white steel.

Iron phosphate pre-treatment.

Primer:

Thermosetting epoxy powder coating (Corvel Zinc Gray 13-7004).

Electrostatic application, cure schedule approximately 6 minutes at 250 degrees.

Thickness 1.8 - 10 mils.

Topcoat:

Triglycidyl Isocyanurate (TGIC) Polyester powder coating.

Electrostatic application cured in oven for approximately 20 minutes at 250 degrees.

Total coatings: 8-10 mils.

Finish color to be black.

Submittals. Bicycle Rack- Shop drawings or catalog cut. Fastener - Catalog cut.

Certifications. Submit manufacturer's certification that the tubing and coatings meet the project specifications.

Prior to production, the manufacturer of the bicycle racks is to submit certification that the steel to be used is in compliance with the "Steel Products Procurement Act" as described in Article 112.11 of the Special Conditions.

Samples: Submit 3-12" long samples of the tubing with finish coat/color and 4 fasteners.

Installation: Bicycle Racks must be located according to the plans and as designated by the Engineer. Fastening of the bicycle rack must be surface mounted on concrete only. Locations of racks to be verified in the field. Drilling through rebar, furnishing electricity and shims are incidental to bicycle rack installation. Siting of racks will be coordinated at the end of the job with the Engineer.

Method of Measurement. BICYCLE RACK will be measured per each bike rack.

Basis of Payment. BICYCLE RACKS will be paid for at the contract unit price for each bicycle rack, which will include furnishing and installing new racks with mounting hardware.

BICYCLE SHELTERS

Description. This item shall consist of furnishing and installing new bicycle shelters.

General Requirements. Contractor is responsible for furnishing and installing of new bike shelters according to the standard details in the construction plans, and for any damage incurred to shelters during installation.

REFERENCES

- A. ASTM A 1008/A – Standard Specification for Steel Bars, Carbon and Alloy, Cold-Finished.
- B. ASTM B 209 – Standard Specification for Aluminum and Aluminum-alloy Sheet and Plate.
- C. ASTM B 221 – Standard Specification for Aluminum and Aluminum-alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
- D. ASCE 7-05 – Minimum Design Loads for Buildings and Other Structures.
- E. ICC/ANSI A 117.1 – Accessible and Usable Buildings and Facilities.
- F. IBC – International Building Code.
- G. Americans with Disabilities Act of 1990 (ADA). As amended by Public Law 101-336 (2009)
- H. AISC Publications:
 1. Code of Standard Practice for Steel Buildings and Bridges.
 2. Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.
 3. Structural Welding Code – Steel & Aluminum.

DESIGN REQUIREMENTS

- A. Basic Wind Speed: per the 2021 (or latest version) of the Illinois Building Code, Chapter 16 Structural Design.
- B. Exposure Category: per the 2021 (or latest version) of the Illinois Building Code, Chapter 16 Structural Design.
- C. Basic Snow Load: per the 2021 (or latest version) of the Illinois Building Code, Chapter 16 Structural Design.
- D. Seismic Design – per the 2021 (or latest version) of the Illinois Building Code, Chapter 16 Structural Design.
- E. Column to concrete footing / concrete pad connection to be in compliance with OSHA Steel Erection Standard CFR – which requires a minimum of four (4) anchor bolts per column.
- F. No onsite welding shall be required or permitted.

SUBMITTALS

- A. Submit manufacturer's technical data for each manufactured product, including certification that each product complies with the specified requirements.
- B. In accordance with the Standard Specifications, the Contractor must submit shop drawings for the Engineer's approval of the manufacturer's shop drawings, including plans, elevations, sections, details, dimensions, anchorage, flashing and seal details (if applicable), finish, and options.
- C. Submit manufacturer's instructions and drawings and develop erection procedures to enable field installation and repair.
- D. Submit color sample.
- E. Submit structural engineering shop drawings for bicycle shelter and footings design.
- F. Submit manufacturer's standard warranty.

DELIVERY, STORAGE, AND HANDLING

- A. Contractor is responsible for delivery, unloading, handling, storing, and protecting of the materials to the site in the manufacturer's original, unopened containers and packaging,

with labels clearly identifying the product name, manufacturer, and location of installation with detailed written instructions for installation.

- B. Contractor is responsible for storing the materials in a clean, dry area indoors in accordance with manufacturer's instructions until delivered to the job site.
- C. Contractor to inspect materials for concealed damage within 48 hours of delivery and compare manufacturer's bill of loading/packing list and report any missing or unaccounted for items to the manufacturer in writing.

WARRANTY

- A. Warranty period: The bicycle shelters and all of its associated components shall be warranted against defects in materials and workmanship for a period of not less than one (1) year from date of final acceptance.

MATERIALS

Materials must be as specified in the plans. The basis of design of the bicycle shelter is the "Razor" 9'x31' model and the manufacturer is "Duo-Gard Industries".

The bicycle shelter must be a pre-engineered and prefabricated framed shelter, columns, rafters, purlin structure with roof panels, trim, flashing, fasteners, and accessories needed for complete installation.

The shelter glazing trim and associated components shall be fabricated using 6063-T5 extruded aluminum members Fed. Spec. QQ-A-200/9C(1). 6061-T and 6005-T6 alloy/temper shall be used where required and finished to match the bicycle shelter.

Fasteners:

- A. Roof framing, accessories, amenities, wall / roof trim: stainless steel or aluminum.
- B. Structural/frame connections: grade 304 or 316 stainless steel.
- C. Anchoring: grade 304 or 316 stainless steel wedge anchor bolts or adhesive anchors.
- D. Fasteners 1/4" dia. and smaller: finished to match at factory (as req'd).
- E. Fasteners 5/16" dia. and larger: to remain unfinished in completed product, or painted in field.
- F. All connections shall be concealed. No exposed fasteners shall be allowed other than anchor bolts.

Structural framing shall be Hollow Structural Sections (HSS) meeting ASTM A500 grade B.

Steel Roof Rafter and Purlins shall be beveled at a 45 degree angle. The openings shall be capped with steel, welded and ground smooth prior to the finishing process.

Ground anchor plates shall be stainless steel, grade 304, which are welded to the columns in the factory. The anchor plates shall be finished to match the bicycle shelter.

Roof sheathing/glazing shall be shall be: standing seam metal roof. 24 gauge standing seam galvalume steel panels – color to be black.

Joint Sealant shall be: Factory-Applied Sealant: Gunnable, non-hardening, elastomeric sealant. ASTM C 920, Type S, Class 12, Grade NS. Fed Spec TT-S-1657, Type 1.n. Field-Applied Sealant shall be as approved by the shelter manufacturer.

Field Fasteners shall comply with shelter manufacturer's instructions for fastener types, quantities, and usage. Substitutions are not permitted.

Steel framework color and finish:

- A. Media Blast Prep to SSPC-SP10/NACE #2 Near White Blast Cleaned Steel.
- B. Tnemec Tneme-Zinc 90-97 primer; to meet ASTM D 1014 (Type II) Exterior Exposure and ASTA D 4541 (type II) Adhesion.
- C. Tnemec F.C. Typoxy Series 27 intermediate coat. To meet ASTM D 4060, ASTM D 3359, ASTA D 4585 and ASTM D 1653.
- D. Tnemec series 1075 Endura-Shield II topcoat; To meet requirements of ASTM D4060, ASTM D 3359, ASTM D 4141, ASTM D 522 and ASTM D4585.
- E. Topcoat Color: Black

For approved equal requests to Tnemec finish provide the testing data for the requested alternate finish method for the following tests and test results. The requested finish system shall meet or exceed the requirements of the ASTM numbers listed above.

- A. ASTM B 117 – Salt spray (Fog) Testing (1,000 hours exposure)
- B. ASTM D 610 – Evaluating Degree of Rusting
- C. ASTM D 1654 – Evaluating Coatings Subjected to Corrosive Environments

Method of Measurement. Bicycle Shelters will be measured in place per each unit installed.

Basis of Payment. The work under this item will be paid for at the contract unit price per each BICYCLE SHELTER, which price will include full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work involved in delivery, unloading, handling, protecting, and furnishing and install the bicycle shelter including footings and anchor bolts and incidental work necessary to complete the installation as specified and as directed by the Engineer, and no additional compensation will be allowed therefor.

BRICK PAVERS

Description: This work shall include excavation, subgrade preparation, base, underlayment, jointing, setting bed, pavers and all required material as called for in the plans and details and any equipment needed to install. This work shall be in accordance with Sections 351, 424 and 1041 of the Standard Specifications.

General: The brick paving contractor shall provide evidence that his firm has specific experience meeting the following criteria:

1. Experience installing pavers using IDOT CA-16 and sand bedding bed method with a minimum of 20,000 square feet per year for the past five (5) years.
2. The same experienced supervisory personnel will be made available for this project. The brick paving contractor shall submit a list of complete projects setting forth description, area, location and references with addresses and phone numbers.

Submittals:

Samples: Submit samples for each paver type required, exhibiting the full range of color characteristics expected.

1. For Brick Paver Banding, submit a minimum of 3 each 4" inches x 8" inches x 2-1/4" in size, in each color and finish specified.
2. In the case of more variegated stones, color photos shall be submitted in addition to the number of samples to show the full range of color and markings to be expected.
3. Jointing: Permeable Paver Aggregate: submit a range of color samples as specified.

Mockups: Build mockup of typical areas as shown on Drawings.

1. Size:
2' feet x 6' feet for Brick Paver Banding, ('A1') & ('A2')
2. Color consistency: demonstrate color consistency with mockup; color range shall not exceed range of color established by samples.
3. Include permeable paver aggregate joints installed as depicted on the drawings.
4. Mockups may become part of the completed Work if approved at time of Substantial Completion.

Materials:

BRICK PAVERS brick shall be clay brick pavers manufactured by Pinehall or the manufacturers listed below. Color shall consist of Pinehall Evanston Mix or similar. Pavers with extensive breakage of corners shall be rejected. Pavers shall be laid as indicated on the plan. Final colors shall be approved by the City of Evanston prior to work.

Drawing Reference: Brick Paver Sidewalk ('A1') and
Brick Paver Sidewalk - Vehicular ('A2')

1. Manufacturer: Pine Hall Brick Co., www.pinehallbrick.com, Model: Evanston Mix or
2. Manufacturer: Whitacre Greer, www.wgpaver.com, Model: North Shore Blend or

3. Manufacturer: Glen Gery, www.glengery.com, Model:
Lawrenceville Full Range 2-1

a. Size:

- i. 4"w x 8"d x 2-1/4"ht Brick Paver Sidewalk ('A1')
ii. 4"w x 8"d x 2-3/4"ht Brick Paver Vehicular ('A2')

Bedding:

The bedding component shall follow what is shown on the plans and details. For BRICK PAVERS the bedding shall conform with Section 351 of the Standard Specifications for Aggregate Base Course.

Jointing:

The jointing component shall meet test ASTM C33. Contractor shall sweep larger particles away from joints until the joints are completely full. Finer sand which doesn't meet test ASTM C33 shall not be used to fill joints.

Base Component:

Portland Cement Concrete with a Subbase Granular Material which shall be in accordance with Section 351 and Section 424 of the Standard Specifications and the special provision for PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH.

Construction: Various pavers shall be installed as shown on the details shown in the plans and per the respective manufacturer's recommendations. No paver setting work shall be performed when the underlayment has free moisture, ice or snow or when the underlayment is frozen. Concrete underlayment shall be sound, clean and free from debris and materials or substances that will hinder the bond of the setting bed. The top surface of the concrete underlayment slab shall not vary more than one fourth (1/4) inch of its proposed elevation. See detail plans for cross section of typical paver system.

To reduce dust during paver installation, pavers shall only be cut using wet saws. No dry cutting is permitted. Cut pavers shall be placed in areas shown on the details in the plans. "L" shaped pavers shall be avoided where possible. Pavers shall be cut radially when joints between pavers on curves exceed 1/8 inch. Radial cut pavers shall be created by trimming both sides of pavers. Paver edgings shall be installed per manufacturer's recommendations.

Setting bed shall be protected from damage prior to setting pavers. Setting shall be done by competent workmen under adequate supervision, and in accordance with manufacturer's recommendations. Pavers with chips, cracks, or other structural or aesthetic defects or those rejected by the Engineer shall not be used. Pavers shall be set true to the required lines and grades in the pattern detailed on the Plans. Pavers shall be tightly butted. Joints between pavers shall be uniform and per manufacture's recommendations. There shall be no raised edges, either pavers or materials adjacent to pavers, that could allow someone to trip. The tolerance for such edges shall be 0" - 1/16" maximum in range.

After a sufficient area of pavers has been installed, the pavers shall be compacted by running a mechanical vibratory compactor over the paved surface until the pavers are uniformly leveled, true to grade, and totally immobilized. Where required, pavers shall be accurately cut with a masonry or concrete saw. Cut edges shall be plumb and straight. Scoring and breaking shall not be acceptable. Joints between pavers shall be filled by sweeping sharp sand into the joints. When joints are filled, paver surfaces shall be swept clean of sand. Paver edgings shall be installed per manufacturer's recommendations.

After completion of the unit pavers, paver installation areas shall be thoroughly swept clean and surface shall be left unsoiled. Where required by the Engineer, surface shall be cleaned with water or an approved cleaner.

Measurement and Payment: This work will be measured for payment in place and the area computed in square feet. This work will be paid for at the contract unit price per SQUARE FOOT for BRICK PAVERS.

STUMP REMOVAL ONLY

Description.

This item of work shall consist of the removal and satisfactory disposal of tree, or any other vegetated, stumps. All excess chips and debris from this operation shall be removed and disposed of outside the limits of the contract. This work will be done in accordance with Section 201 of the Standard Specifications for tree removal, except that stumps are to be removed a minimum of six (6) inches below the natural surface of the ground.

Method of Measurement.

STUMP REMOVAL ONLY will be measured for payment in units in accordance with Section 201 of the Standard Specifications as defined under 201.10(b).

Basis of Payment.

Stump removal shall be paid for at the contract unit price per unit diameter for STUMP REMOVAL ONLY measured as specified herein across the top of the stump. All references to tree removal in the Standard Specifications shall include the item STUMP REMOVAL ONLY.

TREE GRATE

Description. Work under this item shall consist of furnishing and installing the 4' x 6' cast iron tree grates, grate frame, P.C.C thickened slab, granular material, and lava rock mulch, as shown on the plans or as ordered by the Engineer, and specified herein, and must conform to the requirements of applicable portions of the Standard Specifications.

General Requirements.

Material

The material must be gray iron castings conforming to A.S.T.M. A48 or A-48-75, class 35 or 5B, and Article 1006.14 of the Standard Specifications. Concrete must be Class SI and conform to the requirements of Section 1020 of the Standard Specifications.

Design

Grate pattern must comply with ADA Guidelines for equal access. Tree grates will be 1.5" thick with accompanying frame. Grate will consist of two halves with 24" minimum diameter opening for trees. Grate openings must meet or exceed ADA Standard. Grate dimensions will be specified in plans or by the Commissioner. Grate halves must be bolted together with tamperproof bolts. The frames and grates shall be imprinted with cast letters indicating "City of Evanston" at the locations indicated per the standard detail drawings included in the contract plans.

Frame

Frame must be 1 3/4" x 1 3/4" x 1/4" steel frame, or must coordinate with grate dimensions, surrounding the entire perimeter of the tree pit. Frame must be manufactured with anchor tabs for concrete installation.

Finish

1. Surface Preparation:

The top surface must be cleaned in accordance with Section 506 for Method 2 (power or hand tool cleaning) and must be free of all loose rust and loose mill scale.

2. Coating:

Before installation, in an effort to reduce the appearance of oxidation, all surfaces (top, bottom and edges) of the grates are to be coated and rubbed with two applications of a Type 1 Membrane Curing Compound meeting the requirements of Article 1022.01 of the Standard Specifications, or alternative compound as approved by the Engineer.

Surface preparation and coating will not be measured and paid for separately but will be included in the cost of all items listed herein.

Shop Drawings

Shop drawings of all items related to the manufacture and installation of the tree grate and frame must be submitted and approved by Engineer before fabrication.

Manufacturer

Tree grates can be supplied by the following suggested manufacturers:

- a. Neenah Foundry, Neenah, Wisconsin
- b. Urban Accessories, Woodinville, WA;
- c. Ironsmith, Palm Desert, CA;
- d. Fairweather/Olympic Foundry, Seattle, WA.

And must match the following Neenah tree grate styles; square R-8713, rectangle R-8811.

Fasteners

Tree grate halves must be joined together with tamper resistant bolts with tamper resistant bolt assembly packages as provided by the manufacturer. Eliminate drill tap, countersink and assemble for (24) 3/8-16 x 2" flat hd. stnls. stl. screw with pin (kit no. 90357). Tree grates must be secured from beneath only.

Inspection

Installation assumes responsibility for performance.

Surface conditions

Examine frame, concrete ledge, or ground surface to receive grate. The seat for the grates must be cleaned prior to setting the grates. Correct conditions to comply with manufacturer's recommended installation procedures.

Opening to receive grates & frame installation

Sub-base granular material Type B must be placed and compacted to 95% proctor beneath thickened concrete slab at tree pit perimeter prior to installation of frame. Frame will then be placed on top of compacted sub-base surface. Wood forms must be placed inside frame to prevent concrete seepage into pit area, and expansion joints placed on the outside of the frame.

Tree grate frame shall be installed in thickened concrete slab at tree pit perimeter as indicated in plans and as recommended by manufacturer.

If installing grate at back of curb, a C-channel must be installed at curb to accept tree grate frame. If installing grate at pavers on concrete slab, an L-channel must be installed at the slab to accept tree grate frame. Hilti-type Anchoring system for C-channel or L-channel must have a minimum shear capacity of 12 kips live wheel load. Detailed product information must be submitted for approval prior to installation.

Join Grate Halves

Bring tree grate halves together around tree at a level to allow easy access to underside. Join sections at preformed holes using temper-resistant bolt packages provided by manufacturer as suggested. The cost for this work and equipment will be incidental to these items.

Warranty

Manufacturer's written warranty must be handed over to Engineer prior to installation of grates.

Material under Grate

Lava rock shall be black, ½ inch diameter to 1-inch diameter, 3 inches minimum in depth, clean and free of foreign matter, sticks, stones, and clods. The cost of furnishing and installing lava rock mulch will be included in the cost of this item.

Lava rock must meet the bottom of the tree grates and filled around the opening level with grade.

The Contractor must remove all litter and plant debris before mulching. The Contractor must repair grade by raking and adding topsoil as needed, before mulching. Care must be taken not to bury leaves, stems, or vines under mulch material.

All finished mulch areas must be left smooth, flush with the rim of the tree grate, and level to maintain a uniform surface and appearance. All tree grate areas or work areas must be clean of debris and mulch, prior to leaving the site.

Method of Measurement. TREE GRATES will be measured for payment per each tree pit constructed, complete in place.

Basis of Payment. The work under this item will be paid for at the contract unit price per each as shown in the Schedule of Unit Prices for TREE GRATES, which price will include; all necessary excavation, furnishing and placing the granular base, forms, reinforcement, concrete, lava rock, and any other work needed to complete the construction of the tree grate supports. No separate measurement nor payment must be made for Class SI Concrete, castings, frames or other appurtenant work, the cost of which will included in the unit price each for TREE GRATES.

CONTINUOUS TREE PIT SOIL SYSTEM

Section includes:

1. The supply and installation of the CONTINUOUS TREE PIT PLANTING SYSTEM, related materials, components, and activities. The CONTINUOUS TREE PIT PLANTING SYSTEM provides the necessary elements for growing trees to their full potential in dense urban environments.
2. Other materials include, but are not limited to, aggregate, geotextile, geogrid, PAVEMENT SUPPORT SYSTEM, root barriers, aeration piping and surface inlets and planting soil.
3. All work is to be completed per the design requirements of the Consultant of record and to meet or exceed the manufacturer's design and installation requirements.

Definitions:

1. **AGGREGATE PAVEMENT BASE COURSE:** Aggregate material between the top deck of the PAVEMENT SUPPORT SYSTEM and the pavement surface above. It is designed to distribute pavement loads across the top of the PAVEMENT SUPPORT SYSTEM.
2. **AGGREGATE PAVER BASE COURSE:** Aggregate material between the aggregate base course and unit surface pavers, designed to function as a setting bed for the pavers.
3. **AGGREGATE SUB-BASE COURSE:** Aggregate material between the bottom of the PAVEMENT SUPPORT SYSTEM and the compacted sub-grade below, designed to distribute loads from the PAVEMENT SUPPORT SYSTEM to the subgrade. The aggregate sub-base may also be used for drainage of the planting or bioretention soil.
4. **AERATION PIPING SYSTEM:** A system of small, perforated piping that is placed around the tree rootball, and within the PAVEMENT SUPPORT SYSTEM and has inlets at finished grade. This system is used to provide a means of getting air and water into the soil and rootzone, and a means of allowing organic gases, from the decay of organic matter within the soil, to escape. Manual irrigation can be incorporated into this system.
5. **BACKFILL MATERIAL:** Material that is placed around the outside perimeter of the PAVEMENT SUPPORT SYSTEM and the vertical walls of the excavation. It is installed in lifts and compacted to support the pavement surface above. These materials are typically open-graded, self-compacting, $\frac{3}{8}$ " (9 mm) to $\frac{3}{4}$ " (19 mm) angular crushed stone, or a clean, native excavated material, which is free from organic matter, frozen materials, stones larger than 3" (75mm) in diameter, trash, other debris and other toxic substances injurious to plant material.
6. **COMPACTION:** The method of mechanically increasing the density of soil. Soil compaction is measured using the Proctor Test (ASTM D1557-91).

7. **CONSULTANT:** The person or entity, (Landscape Architect, Architect, Civil Engineer) employed by the City to represent their interest in the review of the Work.
8. **GEOTEXTILE / GEOFABRIC / FILTER FABRIC:** A fabric composed of high tenacity polypropylene or polyester fibers which are woven into a network such that the fibers retain their relative position and is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids. Used for reinforcement of aggregate pavement base.
9. **GEOGRID:** Net-shaped woven polyester fabric with a coating, uniaxial or biaxial geogrid, inert to biological degradation, resistant to naturally occurring chemicals, alkalis, and acids; used to provide a stabilizing force within soil structure as the fill interlocks with the grid. Used for reinforcement of aggregate pavement base or subbase.
10. **GEOCOMPOSITE / GEOGRID WITH INTEGRATED NON-WOVEN GEOTEXTILE:** High strength geogrid comprised of stretched monolithic polypropylene flat bars with welded junctions and a mechanically bonded filter geotextile welded within the geogrid structure. Used for reinforcement of aggregate pavement base.
11. **FINISH GRADE:** Elevation of the finished pavement or planting surface.
12. **NATIVE SOIL:** Subsoils that are naturally present in a geographic area. Typically, these are naturally compacted, undisturbed soils.
13. **PLANTING SOIL:** Is a correctly balanced soil mix consisting of silt, sand, clay, and organic material soil mix that shall provide optimum growth conditions for tree roots within the PAVEMENT SUPPORT SYSTEM and other planting spaces per the manufacturer recommendations.
14. **ROOT & MOISTURE BARRIER:** Linear membrane to prevent root and moisture penetration into surrounding areas. This product is used to redirect roots laterally.
15. **PAVEMENT SUPPORT SYSTEM / SOIL CELL SYSTEM:** A plastic modular, pavement support system comprising of interlocking vertical uprights, infill panels and a top deck that allows for air movement above the soil profile. This system is designed to be filled with planting soil for tree rooting; bioretention soil for tree rooting and stormwater attenuation and pollutant removal; or left empty and used for stormwater infiltration, detention, or retention. It is an engineered, load-bearing system that is designed to be used sub-surface under pedestrian and/or vehicle rated pavement surfaces.
16. **SUB-GRADE:** Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill.
17. **TREE PIT / TREE WELL:** Excavated space filled with appropriate soil media for tree planting.
18. **TREE PIT OPENING:** The pavement opening within which a tree is planted.

19. WALKED-IN: A process for light foot compaction of soils by walking through the soil during and following placement.

The Manufacturer shall be responsible for coordinating the delivery of the CONTINUOUS TREE PIT PLANTING SYSTEM to the Contractor. The system includes all components necessary for the assembly of the TREE PLANTING SYSTEM as required per the Drawings.

As required, the Manufacturer shall provide a minimum of 4 hours on-site training and support during the system installation. This may be coordinated with the Pre-Installation Meeting.

Pre-Installation Meeting

Prior to the installation of the CONTINUOUS TREE PIT PLANTING SYSTEM and associated

Work, meet with the Consultant(s), the Contractor, the CONTINUOUS TREE PIT PLANTING SYSTEM installer and project manager, the Manufacturer's representative, the City at their discretion and other parties concerned with the system installation and performance.

Provide at least 72 hours advance notice to all participants attending the pre-installation meeting.

The pre-installation meeting agenda will include, but is not limited to:

- a. The review of required submittals,
- b. Coordination and sequence of installation with other trades and the construction schedule,
- c. Review of materials, system details and methods of installation,
- d. Site specific considerations (ie: geotechnical, hydrology),
- e. System layout and installation procedures,
- f. Mock-up of the CONTINUOUS TREE PIT PLANTING SYSTEM.

The Contractor shall be responsible for preparing the site for the system installation including, but not limited to, excavation, temporary shoring, system installation, compaction, backfilling and all labor, tools and materials required.

The Contractor shall be responsible for preparing a schedule and coordinating work under this section with other trades and disciplines impacting this work.

SYSTEM DESCRIPTION

A. The CONTINUOUS TREE PIT PLANTING SYSTEM shall be specifically designed for the purpose of providing large volumes of uncompacted soil for healthy tree growth and/or stormwater management (bioretention) under load-bearing pavement surfaces. At minimum, the CONTINUOUS TREE PIT PLANTING SYSTEM shall provide for uncompacted soil, soil and rootball aeration, management of tree roots, soil inspection, rootball anchoring and stormwater drainage.

B. Specific to the site requirements, the CONTINUOUS TREE PIT PLANTING SYSTEM shall have the flexibility to be assembled around existing structures, utilities and in tight constraints to achieve the specified soil and/or stormwater volume. The

system shall allow for easy disassembly and reassembly to allow for utility repair and/or maintenance within and below the system.

C. The CONTINUOUS TREE PIT PLANTING SYSTEM shall be a complete system that at minimum includes but is not limited to the following integral components: PAVEMENT SUPPORT SYSTEM, geogrid/geofabric, aeration piping, fittings and surface inlets, root management products.

COMPONENTS

A. PAVEMENT SUPPORT SYSTEM / SOIL CELL SYSTEM

1. For ease of installation and for future utility repair and/or maintenance, the PAVEMENT SUPPORT SYSTEM shall consist of two main components, an upright and a top deck. An optional interlocking side infill panel shall be available and installed where additional lateral strength is required, per the Consultants design requirements.
2. The PAVEMENT SUPPORT SYSTEM shall have the ability to be uniformly stacked to increase the cubic volume of soil per area of installation, and to work around existing below ground infrastructure. At minimum, the following five depth configurations shall be available: ~16", ~24", ~32", ~40", and ~48".
3. The assembled PAVEMENT SUPPORT SYSTEM shall have a minimum accessible soil volume of 97% and be continuously open in both length and width.
4. The assembled PAVEMENT SUPPORT SYSTEM shall have the capability of accommodating utilities up to ~16" (400 mm) within the system.
5. As assembled, the PAVEMENT SUPPORT SYSTEM uprights shall interlock in both the vertical and horizontal axis, and the top deck shall interlock with the uprights. The PAVEMENT SUPPORT SYSTEM shall be designed to be assembled to form an interlocked soil cell matrix, or specific to site requirements, the PAVEMENT SUPPORT SYSTEM may be installed as independent or groups of soil cells. Spacing between the PAVEMENT SUPPORT SYSTEM soil cells shall be determined by the Consultant based on pavement design and load requirements. The layout of the PAVEMENT SUPPORT SYSTEM shall have the ability to be field adjusted to meet specific site requirements.
6. The PAVEMENT SUPPORT SYSTEM shall have a minimum load bearing strength of 6,260 pounds per square foot / 30,564 kilograms per square meter, as evaluated by a third-party laboratory. The assembled PAVEMENT SUPPORT SYSTEM shall at minimum, be capable of supporting vehicle loads in accordance with AASHTO H20/HS-20, including a safety factor of 1.5, when used in conjunction with approved vehicle rated pavement profiles.
7. The PAVEMENT SUPPORT SYSTEM shall meet the minimum load bearing strength of 6,260 pounds per square foot / 30,564 kilograms per square meter when installed on slopes up to 5%. For slopes greater than 5%, and less than 10%, please contact the manufacturer for design assistance.

8. The PAVEMENT SUPPORT SYSTEM shall be designed to be filled with PLANTING SOIL, with the top deck either on or off, and without the use of strong backs to hold the uprights in position during soil installation.
9. The PAVEMENT SUPPORT SYSTEM components shall be manufactured using 100% recycled plastic to the following sizes and specifications:
 - a. Upright: Injection molded, polypropylene or polyethylene, with nominal dimensions as follows,
 1. 24"/600mm SOIL CELL UPRIGHT: ~20"x ~24" x ~4" (500 x 600 x 100 mm).
 - b. Top Deck: Injection molded, polypropylene or polyethylene deck with nominal dimensions as follows,
 1. The top deck shall be designed to provide a 3" aeration layer above the planting soil within the SOIL CELL SYSTEM.
 2. SOIL CELL TOP DECK: ~20" x ~20" x ~3" (500 x 500 x 75 mm).
 - c. Side Infill Panel: Injection molded, polypropylene or polyethylene with nominal dimensions as follows,
 1. 24"/600mm SOIL CELL SIDE INFILL PANEL: ~13" x ~20.5" x ~1.5" (330 x 520 x 38 mm).

RELATED PRODUCTS

A. ROOT & MOISTURE BARRIER

1. The ROOT & MOISTURE BARRIER shall be designed as a linear membrane that is installed to prevent tree root growth and moisture intrusion in building foundations and underground utilities. The ROOT & MOISTURE BARRIER may be installed vertically or horizontally, as specified on the plans. The ROOT & MOISTURE BARRIER shall be manufactured to meet the following requirements:
 - a. Material shall be 100% recycled plastic.
 - b. Minimum Thickness: 0.04" (1.00 mm).
 - c. Form: Linear rolls with a smooth surface.
 - d. Depth 24" (600 mm), as specified on the plans.
 - e. Roll Length: 100' (30 m)
 - f. Color: Black
 - g. Seams shall be overlapped ~8" (200 mm) and sealed on both sides with joining tape.

B. ROOTBALL AERATION SYSTEM

1. The ROOTBALL AERATION SYSTEM shall be designed to provide a means of getting air and water into the soil and rootzone, and a means of allowing organic gases from the decay of organic matter within the soil to escape. The ROOTBALL AERATION SYSTEM components shall be manufactured to meet the following requirements:
 - a. Aeration Pipe
 1. Material shall be 100% recycled plastic.
 2. Diameter: 4" (60 mm), as required per plan detail.
 3. Form: Slit perforated pipe in rolls.
 4. Connectors: Molded connectors (coupling, tee) to effect proper jointing.
 5. Roll Length: 100' (30 m)
 6. Color: Black
 - b. Aeration Inlet
 1. Body: Plastic
 2. Grate: Plastic

E. SOIL AERATION SYSTEM

1. The SOIL AERATION SYSTEM shall be designed to provide a means of getting air and water into the soil a means of allowing organic gases, from the decay of organic matter within the soil, to escape. The SOIL AERATION SYSTEM components shall be manufactured to meet the following requirements:
 - a. Pipe
 1. Material shall be 100% recycled plastic.
 2. Diameter: 4" (100 mm).
 3. Form: Precut non-perforated pipe.
 4. Length: ~20" (.5 m)
 5. Color: Black
 - b. Aeration Inlet
 1. Size: 6" x 6" (150 mm)
 2. Body: Stainless Steel
 3. Grate: Stainless Steel
 - a. Grate walking surface shall meet ADA requirements.

F. GEOGRID REINFORCEMENT FOR SOIL

1. A GEOGRID meeting the following meeting the following requirements shall be placed on top of the AGGREGATE SUB-BASE COURSE, beneath the PAVEMENT SUPPORT SYSTEM.
2. High-performance GEOGRID reinforcement for soil, constructed of high molecular weight and high tenacity polyester yarns utilizing a knitting process and polymeric coating to provide superior engineering properties. The GEOGRID shall be engineered to be mechanically and chemically durable, in both the harsh construction installation phase and in aggressive soil environments.
3. GeoGrid Physical Properties:

Property	Imperial	Metric
Ultimate Strength (MD) (ASTM D 6637 - Method A Single-Rib)	3,600 lbs/ft	52.5 kN/m
Creep Limited Strength (ASTM D 5262D 6992)	2,323 lbs/ft	33.9 kN/m
Long-term Design Strength (Sands, Silt & Clay)	1,919 lbs/ft	28.0 kN/m
Product Weight	6.5 oz/sy	220.4 g/sqm

GEOGRID WITH INTEGRATED NON-WOVEN GEOTEXTILE:

1. A GEOGRID WITH INTEGRATED NON-WOVEN GEOTEXTILE meeting the following meeting the following requirements shall be placed on top of the PAVEMENT SUPPORT SYSTEM and beneath the AGGREGATE PAVEMENT BASE COURSE.
2. The GEOGRID WITH INTEGRATED NON-WOVEN GEOTEXTILE is a high strength geogrid comprised of stretched monolithic polypropylene flat bars with welded junctions and a mechanically bonded filter geotextile welded within the geogrid structure. It is used for reinforcement of granular pavement base. The GEOGRID WITH INTEGRATED NON-WOVEN GEOTEXTILE shall be manufactured to meet the following requirements:
 - a. GeoGrid Physical Properties:

Property	Units	Value
Mass per unit area	g/m ³	250
Max tensile strength (machine direction/cross machine direction)	kN/m	≥ 40 / ≥ 40
Elongation at nominal strength (machine direction/cross machine direction)	%	≤ 8 / ≤ 8

- b. Geotextile Properties

Property	Units	Value
Mass per unit area	g/m ³	150
Max tensile strength (machine direction/cross machine direction)	kN/m	7.5 / 11
Elongation at nominal strength (machine direction/cross machine direction)	%	40 / 30
Puncture Force (x-s)	N	1,670
Opening size	mm	0.13
Water Permeability – flow rate H50	l/sm ²	110

2.04 OTHER RELATED MATERIALS

A. AGGREGATE SUB-BASE COURSE (SPECIFIED AS A DRAINAGE LAYER)

1. Coarse aggregate shall meet the following requirements:
 - a. Aggregate shall be an open-graded, self-compacting, angular stone produced from 100% crushed material.
 - b. All aggregate shall be clean and washed.
2. Unless otherwise approved by the Specifying Engineer, coarse aggregate for the AGGREGATE SUB-BASE COURSE shall be uniformly graded as defined below:
 - a. AGGREGATE SUB-BASE COURSE Physical Properties (AASHTO #56, 57, 6, 67, 68):

Sieve	#56	#57	#6	#67	#68
	Percent Passing				
1 1/2"	100	100	-	-	-
1"	95-100	95-100	100	100	100
3/4"	-	-	90-100	90-100	90-100
1/2"	25-80	25-80	20-55	-	-
3/8"	-	-	0-15	20-55	30-65
No 4	0-10	0-10	0-5	0-10	5-25
No 8	0-5	0-5	-	0-5	0-10
No 16	-	-	-	-	0-5
No 50	-	-	-	-	-

3. Sand shall not be an acceptable substitute for coarse aggregate.

B. AGGREGATE SUB-BASE COURSE (NOT SPECIFIED AS A DRAINAGE LAYER)

1. An aggregate meeting one of the following specifications:
 - a. ASTM D1241-07, Type 1, Gradation B Standard Specification for Materials for Soil-Aggregate Sub-base, Base, and Surface Courses.

Sieve	Percent Passing
1 1/2"	100
1"	75-95
3/8"	40-75
No 4	30-60

Sieve	Percent Passing
No 10	20-45
No 40	15-30
No 200	5-15

b. Local Department of Transportation aggregate that most closely meets the gradation of ASTM D1241-07.

2. Sand shall not be an acceptable substitute for aggregate.

C. AGGREGATE BASE COURSE (PAVEMENT BASE – NON-PERVIOUS SURFACE)

1. An aggregate meeting one of the following specifications:

a. ASTM D1241-07, Type 1, Gradation B Standard Specification for Materials for Soil-Aggregate Sub-base, Base, and Surface Courses.

Sieve	Percent Passing
1 1/2"	100
1"	75-95
3/8"	40-75
No 4	30-60
No 10	20-45
No 40	15-30
No 200	5-15

b. Local Department of Transportation aggregate that most closely meets the gradation of ASTM D1241-07.

2. Sand shall not be an acceptable substitute for aggregate.

D. PLANTING SOIL (INSTALLED WITHIN THE PAVEMENT SUPPORT SYSTEM)

1. As recommended by the manufacturer.

E. BACKFILL MATERIAL (INSTALLED AROUND THE PERIMETER OF THE PAVEMENT SUPPORT SYSTEM)

1. The BACKFILL MATERIAL shall meet one of the following specifications:

a. Open-graded, self-compacting, 3/8" (9 mm) to 3/4" (19 mm) angular crushed stone.

b. Clean, compactable, native excavated material (structural fill), that is free from organic matter, frozen materials, stones larger than 3" (75mm) in

diameter, trash, other debris and other toxic substances injurious to plant material.

- c. Clean, compactable, coarse grained soil, meeting the following requirements,
 - i. Unified Soil Classification system for soil type GW, GP, GC with less than 30% fines, SW, and SC with less than 30% fines.

METHOD OF MEASUREMENT: Furnishing and installing continuous tree pit soil system and all associated equipment, planting soil, and materials will be measured in place as Continuous Tree Pit Soil System. The cost of associated equipment and materials shall be incidental to the cost of Continuous Tree Pit Soil System.

BASIS OF PAYMENT: Furnishing and installing continuous tree pit soil system will be paid for at the contract unit price for SQUARE FOOT for all CONTINUOUS TREE PIT SOIL SYSTEM materials and equipment.

PLANTER

Description. This work shall consist of furnishing and installing planter pots including planter pot planting soil and drainage media at the locations specified in the Contract plans or as directed by the Engineer.

Planter Construction: Match existing

- A. Model: Match existing
- B. Height: Match existing
- C. Diameter: Match existing
- D. Weight: Match existing
- E. Design: Tapered with rolled rim
- F. Material Finish: Match existing
- G. Installation: Surface mount, no anchors

Method of Measurement. Planter(s) will be measured in place per each unit installed.

Basis of Payment. The work under this item will be paid for at the contract unit price per each PLANTER, which price will include labor, furnishing, installation, planter pot soil, planter pot drainage media, equipment, materials and incidental work necessary to complete the installation as specified.

PEDESTRIAN RAIL (SPECIAL)

Description. Work under this section shall consist of furnishing, fabricating, and installing new metal railings and handrails or the type and height indicated, at locations as shown on the plans. This project includes the following metal railing and handrail design, as shown on the plans.

- A. 42" Galvanized Steel Railing
- B. 42" Aluminum Railing
- C. 36" Aluminum Handrail

General Requirements. Contractor is responsible for furnishing and installing of new railings and handrails according to the standard details in the construction plans, and for any damage incurred to railings during installation.

REFERENCES

- A. AISC - Manual of Steel Construction, 14th Edition.
- B. AISI-07 - Specifications for the Design of Cold-Formed Steel Structural Members.
- C. AISI-14 - Cold-Formed Steel Design Manual.
- D. Aluminum Association, AA-M10-C22-A41 and AA-M32-C22-A41.
- E. ASTM A36-14 - Carbon Structural Steel.
- F. ASTM A53-12 - Pipe, Steel, Black and Hot-Dipped Zinc-Coated Welded and Seamless.
- G. ASTM A108-08 - Steel Bar, Carbon and Alloy, Cold-Finished.
- H. ASTM A193-14a - Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
- I. ASTM A194-14a - Carbon and Alloy Steel Nuts for Bolts for High-Pressure or High-Temperature Service, or Both.
- J. ASTM A500-13 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
- K. ASTM A501-14 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- L. ASTM B429-10e1 - Aluminum-Alloy Extruded Structural Pipe and Tube.
- M. ASTM C881-14 - Epoxy-Resin-Base Bonding Systems for Concrete.
- N. ASTM C882-13a - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear.
- O. ASTM D648-07 - Standard Test Method for Deflection Temperature of Plastic Under Flexible Load in the Edgewise Position.
- P. ASTM D695-10 - Standard Test Method for Compressive properties of Rigid Plastics.
- Q. ASTM E 985-00 (2006) - Permanent Metal Railing Systems and Rails for Buildings.
- R. ASTM F593-13a - Stainless Steel Bolts, Hex Cap Screws, and Studs.
- S. ASTM F594-09 (2015) - Stainless Steel Nuts.
- T. AWS A2.4-12 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
- U. AWS D1.1-10 - Structural Welding Code - Steel.
- V. AWS D1.2-08 - Structural Welding Code- Aluminum.
- W. AWS D1.3-08 -Structural Welding Code - Sheet Steel
- X. SSPC PM-SET B/PM-SET C-05 - Society for Protective Coatings: Painting Manuals Volume 1 and 2.

SUBMITTALS

- A. The Contractor must submit shop drawings for the Engineer's approval indicating profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories including plans, elevations, sections, details, dimensions, welded connections using standard AWS welding symbols & lengths, and finish options.
- B. The Contractor is to show the railings and handrails including splices, attachments, and dowel lengths. Show all railings in related and dimensional position with scale plans and

elevations and coordinate these with local codes and project requirements prior to fabrication.

- C. Submit warranty information.

COORDINATION

- A. Coordinate the design, fabrication, and erection of the Work with the requirements for openings and support of and by the Work of other Sections.
- B. Provide templates required for accurately locating anchorages and fasteners required to anchor or attached items to the Work of other Sections. Supply the templates in a timely fashion so as to not delay the Work of other Sections.
- C. Where items specified under this Section are built into the Work of other Sections, provide those items to those Sections in a timely fashion to avoid delay of the Work of other Sections. Coordinate placement to verify accurate locations and correct installation.

DESIGN REQUIREMENTS

- A. Railing assembly, handrails, and attachments are to resist minimum lateral force of 300 pounds at any point with damage or permanent set.
- B. Design of railings and handrails must be performed under the direct supervision of and sealed by a Professional Structural Engineer licensed in the State of Illinois and experienced in the design of this Work. Calculations must include: Bending stress in, and deflection of, railings and post system to meet the requirements of ASTM E985, stress in post base connection, calculations of anchorage forces, and post-installed concrete anchors.

DELIVERY, STORAGE, AND HANDLING

- A. Deliver bolts, nuts, and washers in bags or boxes, tagged for identification.
- B. Store other metal products in a weather tight and dry place until ready for use in the Work.
- C. Railings and handrails are to be adequately packaged and wrapped so as to prevent, scratching and denting during shipment, storage, and installation. Wrapping must be left intact, insofar as possible, until railings and handrails are completely installed.

WARRANTY

- B. Warranty period: The railings, handrails, and all of its associated components shall be warranted against defects in materials and workmanship for a period of not less than one (1) year from date of final acceptance.

MATERIALS

- A. Steel and Iron: Steel Sections: ASTM A36.
- B. Steel Tubing: ASTM A500, Grade B.
- C. Aluminum, Structural Shapes, and Plates: Alloy 6061-T6, meeting referenced specifications and ASTM sections found in Aluminum Association current Construction Manual Series. Aluminum pipe must conform to ASTM B429, Alloy 6063-T6.

FASTENERS

- A. Bolts, Nuts, and Washers:
 - 1. Bolts: ASTM F593, Type 316.
 - 2. Nuts: ASTM F594, Type 316.
 - 3. Washers: Same material as nuts.
- B. Locknuts, Washers, and Screws:
 - 1. Elastic Locknuts, Steel Flat Washers, RHMS Round Head Machine Screws: AISI Type 316 stainless steel.

2. Flat Washers: Molded nylon.
 3. Stainless Steel Bolts and Nuts: ASTM A193 and A194, AISI Type 316 with minimum yield strength for bolts of 95,000 psi, unless otherwise indicated.
- C. Post-Installed Anchors: Proprietary type, designed for intended uses, and ICC ESR evaluated.
1. Bolt Size: Minimum 1/2 inch diameter unless otherwise indicated.
 2. Acceptable Manufacturers, as listed below and meeting the criteria and requirements specified herein, will be used for a basis of design:
 - i. ITW Ramset/Red Head.
 - ii. Simpson.
 - iii. Hilti.
- D. Embed Anchors: AISI Type 316 Stainless Steel.
- E. Anchor Bolts: AISI Type 316 stainless steel with minimum yield strength of 30,000 psi, 1/2 inch minimum diameter with hex nuts, unless otherwise indicated.
- F. Adhesive Anchors:
1. Anchor Rod: AISI Type 316 stainless steel threaded rod free of grease, oil, or other deleterious material with a 45 degrees chisel point.
 2. Epoxy Adhesive: ASTM C881, Type 1, Grade 3, Class A, B, or C.
 - i. Two-component, 100 percent solids, nonsag, paste, insensitive to moisture, designed to be used in adverse freeze/thaw environments and gray in color.
 - ii. Cure Temperature, Pot Life, and Workability: Compatible for intended use and environmental conditions.
- G. Adhesive Anchors:
1. Anchor Rod: AISI Type 316 stainless steel threaded rod free of grease, oil, or other deleterious material with a 45 degrees chisel point.
 2. Epoxy Adhesive: ASTM C881, Type 1, Grade 3, Class A, B, or C.
 - i. Two-component, 100 percent solids, nonsag, paste, insensitive to moisture, designed to be used in adverse freeze/thaw environments and gray in color.
 - ii. Cure Temperature, Pot Life, and Workability: Compatible for intended use and environmental conditions.
 3. Mixed Epoxy Adhesive: Nonsag paste consistency with ability to remain in a 1 inch diameter overhead drilled hole without runout, holding the following properties:
 - i. Slant Shear Strength, ASTM C881/882, No Failure In Bond Line, Dry/Moist Conditions: 5,000 psi.
 - ii. Compressive Strength, ASTM D695: 14,000 psi minimum.
 - iii. Tensile Strength, ASTM D695: 4,500 psi.
 - iv. Heat Deflection Temperature, ASTM D648: 135 degrees F, minimum.
 4. Epoxy Adhesive Packaging:
 - i. Disposable, self-contained cartridge system capable of dispensing both epoxy components in the proper mixing ratio, and fit into a manually or pneumatically operated caulking gun.
 - ii. Dispense components through a mixing nozzle that thoroughly mixes components and places epoxy at base of predrilled hole.
 5. Mixing Nozzles: Disposable, manufactured in several sizes to accommodate sizes of anchor rods.
 6. Cartridge Markings: Include manufacturer's name, batch number, mix ratio by volume, product expiration date, ANSI hazard classification, and appropriate ANSI handling precautions.

7. Acceptable Manufacturers, as listed below and meeting the criteria and requirements specified herein, will be used for a basis of design:
 - i. Hilti.
 - ii. ITW Ramset/Red Head.
 - iii. Simpson.

H. Accessories

1. Welding Materials: AWS D1.1 and AWS D1.2; type required for materials being welded.
2. Temporary Supports, Staying and Spacing: As required by project conditions.
3. Shims and Leveling Devices: As required by project conditions.

I. Galvanized Railing, Aluminum Railing, and Aluminum Handrail

1. General: Provide prefabricated/pre-engineered railing and handrail requirements as specified with flush connections.
2. Meet load and deflection criteria specified. In addition, all mid-rails must be required to withstand a 300 pound concentrated vertical load applied at any point without damage to and/or looseness of the pipe, fittings, or attaching hardware.
3. Acceptable Manufacturers as listed below and meeting the criteria and requirements specified herein, will be used for a basis of design:
 - i. Julius Blum & Co., New Jersey.
 - ii. Wesrail, Moultrie Manufacturing Co., Moultrie, Georgia.
 - iii. Wagner Railing Systems, Butler, Wisconsin.
4. Pipe Railing System: Construct largest diameter permitted by code, and never less than 1-1/2 inch nominal post and rail system, tight fitting, as specified below.
5. 1-1/2 inch Post and Handrail System:
 - i. Rails: Schedule 40.
 - ii. Posts: Schedule 80.
 - iii. Post Spacing: Maximum 6 feet on center horizontal spacing, unless otherwise noted.
 - iv. Provide solid dowels of 6105-T5 or 6061-T6 aluminum to fit tight inside the posts where required and provide calculations or test data to substantiate dowel length.

J. Fittings

- i. Post Base: Cast aluminum or steel to allow for cutting posts to accurate length in field and to allow tight fit of post base to top of concrete or stringers.
- ii. Provide predrilled holes in base for stainless steel bolts.

FINISHES

- A. Aluminum Railing & Handrail Pipe and Post Finish: Clear anodize in accordance with Aluminum Association AA-M32-C22-A41. Deliver with protective plastic wrap.
- B. Galvanized Railing Finish: Minimum 1.85 ounces per square foot zinc coating in accordance with ASTM A386.
- C. Contact with Dissimilar Materials: The contractor shall apply two coats of inert coating to all aluminum or steel in direct contact with concrete to minimize material degradation from corrosion.

FABRICATION

A. Preparation:

2. Prior to fabrication, straighten all materials by methods which will not injure material. Do not straighten any material after fabrication and assembly.

3. Prior to assembling component parts of a connection, thoroughly clean all contact surfaces of loose rust, scale, burrs; remove all local twists and bends.
- B. Fit and shop assemble in largest practical sections, for delivery to site.
- C. Fabricate items with joints tightly fitted and secured.
- D. Seal shop joined members by continuous welds where required.
- E. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
- G. Exposed Mechanical Fastenings:
 1. Flush countersunk screws or bolts; unobtrusively located; consistent with design of component.
- H. Shop Connections:
 1. Welded wherever possible, unless otherwise indicated.
 2. Make all welds exposed to the weather or damp conditions in the finished Work continuous and watertight.
- I. Field Connections:
 1. Bolted unless otherwise indicated.
 2. Provide bolts and holes for field connections.
- J. Bolted Connections:
 1. Bolted connections must have not less than two bolts.
 2. Connection design must consider the bolt to have the threads in the shear plane.
 3. Drill, punch, or ream holes 1/16 inch larger than bolt diameter.
 4. Unless otherwise indicated, holes may be punched if material is not thicker than bolt diameter plus 1/16 inch.
 5. Ream unfair holes, but only up to next larger bolt size.
- K. Assembly Using Standard Threaded Fasteners:
 1. Provide beveled washers under bolt heads or nuts riding on surfaces exceeding 5 percent slope with respect to head or nut.
 2. Tighten bolts for full bearing under heads and nuts and to snuggest condition.
- L. Shop Welding:
 1. Perform welding in accordance with AWS D1.1, D1.2, and D1.3.
 2. Provide welds of size indicated on the shop drawings.
 3. Where weld size is not indicated, use AWS minimum weld size for materials to be connected.
 4. Grind weld splatter and deburr sharp edges smooth prior to cleaning.
- M. Close exposed ends of pipe, tube, and guard railing with aluminum caps and screws.
- N. Perform the Work according to approved shop drawings by workmen experienced in fabrication and erection of galvanized steel and aluminum railing systems of type and quality specified.
- O. Railing Post to be Bolted to Metal or Concrete:
 1. Furnish longer than needed and field cut to exact dimensions required to satisfy any vertical variations on actual structure.
 2. In lieu of field cutting, provide an approved base fitting that provides plus or minus 1/4 inch vertical adjustment inside the base fitting.

EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive the Work. Notify the Engineer, in writing, of any conditions requiring corrective action.

- B. If unsatisfactory conditions exist, do not commence the installation until such conditions have been corrected. Beginning of installation means acceptance of existing conditions.
- C. Preparation:
1. Verify that field measurements are as shown on Drawings and approved shop drawings. Report discrepancies to the Engineer for clarification or resolution prior to starting fabrication.
 2. Clean and strip primed steel items to bare metal where site welding is required.
 3. Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate Sections.
- D. Railing Installation:
1. Railings are to be installed as shown on the Plans.
 2. Install items plumb and level, accurately fitted, free from distortion or defects.
 3. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
 4. Perform installation in accordance with manufacturer's written recommendations for installation and as indicated.
- E. Protection from Entrapped Water:
1. Make provisions in exterior and interior installations subject to high humidity to drain water from railing system.
 2. When posts are mounted in concrete or when bends or elbows occur at low points, drill weep holes 1/4 inch in diameter at lowest possible elevations, one hole per post or rail, in the plane of the rail.
- F. Setting Posts (Surface Mounted):
1. Post bolted baseplate connectors must sit solidly on concrete, stair stringer, or other material as indicated.
 2. Do not use shims, wedges, grout, etc., for guardrail post alignment or other reasons.
 3. Accurately field measure for correct length, cut and secure to the post baseplate connector.
 4. If approved adjustable post base is provided, adjust post as required but do not raise beyond the bottom of the lowest setscrew in the base fitting.
- G. Posts and Rails:
1. Install posts and rails in same plane.
 2. Offset rail is acceptable for use on stairs if the post is attached to the web of the stringer or structural support.
- H. Field weld components indicated on Drawings and shop drawings.
1. Perform field welding in accordance with AWS D1.1, D1.2, and D1.3.
- I. Bolted Connections:
1. Bolted connections must have not less than two bolts.
 2. Ream unfair holes, but only up to next larger bolt size.
 3. As erection progresses, bolt up the Work to assume dead loads, lateral forces, and erection stresses.
- J. Assembly Using Standard Threaded Fasteners:
1. Provide beveled washers under bolt heads or nuts riding on surfaces exceeding 5 percent slope with respect to head or nut.
 2. Tighten bolts for full bearing under heads and nuts and to snugtight condition.
- K. Erection Tolerances:
1. Set posts plumb and aligned to within 1/8 inch in 12 feet.
 2. Set rails horizontal or parallel to rake of steps to within 1/8 inch in 12 feet.
- L. Cleaning
1. Wash thoroughly using clean water and soap. Rinse with clean water.

2. Do not use acid solution, steel wool, or other harsh abrasive.
- M. Repair and Adjustment
1. Items must not be cut or altered without prior approval of the Engineer.
 2. Repair abraded areas of shop-applied coatings, and areas of weld where the shop-applied coating has been damaged with a primer or galvanizing repair compound, as applicable, that is compatible with the shop coating.
 3. Aluminum Railing and Handrail: Free of burrs, nicks, and sharp edges when installation is complete.
 4. Remove projections or irregularities that present a hazard or prevent users from sliding their hands continuously along top rail.
 5. If stains remain after cleaning, restore in accordance with manufacturer's recommendations or replace with material meeting specified finish.
- N. Defective Work
1. These Specifications require field fit-up. Do not use shims or grout under baseplates. Misfits must be considered defective and will be rejected.
 2. Work not conforming to required lines, details, dimensions, tolerances, finishes, strength, or other specified requirements must be considered defective. Notify the Engineer upon discovery of these conditions.
 3. Required repair or replacement of defective Work will be determined by the Engineer.
 4. Do not patch, fill, touch-up, repair, or replace items except upon express direction of the Engineer for each individual area.
 5. Defective Work must be repaired or replaced as recommended by the Engineer at no additional expense to the Owner.
- O. Protection
1. Protect installed items from damage from subsequent construction operations.

Method of Measurement. PEDESTRIAN RAIL (SPECIAL) will be measured for payment by the linear foot, according to the actual linear foot length installed as shown on the Plans and as directed by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per foot for PEDESTRIAN RAIL (SPECIAL), of the type specified. This work shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and installing the railing/handrail complete-in-place, including galvanizing, material finish, hardware, connections, footings, and as shown on the plans, as specified in the Special Provisions, and as directed by the Engineer, and no additional compensation will be allowed therefor.

MULCH PLACEMENT, 3"

Description. This item shall include all labor, materials and equipment necessary to furnish, transport and install hardwood bark mulch at all new tree plantings (for trees without grates) and existing trees to be protected and remain in parkways.

Submittals.

Shredded hardwood bark mulch – sample
Request for Material Inspection Sheet

Products.

- A. Shredded Hardwood Mulch (Parkways and Tree pits without grates).
 - a. Hardwood bark mulch shall be clean, finely shredded mixed-hardwood bark, not to exceed two (2) inches in its largest dimension, free of foreign matter, sticks, stones, and clods. All hardwood mulch shall be processed through a hammer mill. Hardwood bark not processed through a hammer mill shall not be accepted. A sample and request for material inspection form must be supplied to the Engineer for approval prior to performing any work.

Preparation and Execution.

- A. Place mulch layer around Parkway trees (existing protected trees to remain and proposed) or Tree pits without grates (existing protected trees to remain and proposed) as follows:
 - a. Three (3) inches deep - keep mulch 6"-8" away from the root flare / trunk of the tree. Trees installed in grass parkways shall have a 3' minimum diameter mulch ring.
 - b. Contractor shall make inspections of all tree pits without tree grates periodically (every six months during the guarantee period as specified) to ensure that level of mulch has been maintained.

Method of Measurement. MULCH PLACEMENT, 3", will be measured per square yard. All materials required to provide and install shredded hardwood bark mulch shall be considered incidental to this item.

Basis of Payment. MULCH PLACEMENT, 3", will be paid for at the contract price per square yard, which price shall include furnishing and installing the hardwood bark mulch as specified, and all materials, equipment and labor necessary to complete the work. Also included with these items is all initial maintenance as described.

DRAINAGE & UTILITY STRUCTURES TO BE RECONSTRUCTED

This work shall consist of the reconstruction of storm structures and/or utility structures, water valve boxes, b-boxes, water valve vaults, sanitary sewer structures, electrical structures etc., at those locations as directed by the Engineer in the field. This work shall be completed in accordance with Section 602 of the Standard Specifications, and specifically Section 602.07 using precast concrete reinforcement rings. Per Article 602.15, all storm structures and/or utility structures, water valve boxes, b-boxes, water valve vaults, sanitary sewer structures, electrical structures etc., to be reconstructed shall be clean of any accumulation of silt, debris, foreign matter of any kind, and shall be free from such accumulations at the time of final inspection.

This work will be paid for at the contract unit price per EACH for DRAINAGE & UTILITY STRUCTURES TO BE RECONSTRUCTED and shall include all materials, equipment, and labor required to complete the work as specified above.

EARTH EXCAVATION

Work under this item shall be performed in accordance with the applicable portions of Sections 202, of the "Standard Specifications", except as herein modified.

All excess material (Broken Concrete, Culvert Pipe, Waste Roadway Excavation, Surplus Material from Sewer Trenches, etc.) shall be legally disposed of outside the limits of the right-of-way. It shall be the contractor's responsibility to select dump sites and obtain permission and all necessary permits to use dump sites. Payment for this work shall be included in the Contract unit price per cubic yard for EARTH EXCAVATION.

EXPLORATION TRENCHES

Delete Section 213 in its entirety and replace it with the following:

SECTION 213. EXPLORATION TRENCH

213.01 Description. The Contractor shall excavate exploration trenches as directed and approved by the Engineer to confirm the locations and/or sizes of existing water and sewer utilities. Exploration trenches shall be excavated using methods minimizing possible damage to the utilities. Following completion, trenches shall be backfilled in accordance with Section 208 and temporary paving provided as necessary to the satisfaction of the Engineer. Exploration trenches dug by the Contractor for his own purposes shall be incidental to construction and no separate payment shall be made.

213.02 Utilities Encountered. If, during the exploratory excavation process, utilities are uncovered which cause interference with the Work, the Contractor shall stop all affected work and immediately notify the Engineer.

213.03 Trenches Requested by Engineer. The Engineer may also request that the Contractor excavate exploration trenches in the Project area.”

Exploration trenches ordered by the Engineer will be measured for payment per FOOT for actual trenches excavated and backfilled to the depth specified. This work will be paid for at the Contract unit price per FOOT for EXPLORATION TRENCH, of the depth specified.

Each unit of exploration trenches shall be up to 5 feet in length. These Contract unit prices shall be payment in full for all labor, materials, and equipment required for: pavement saw-cutting, removal, and disposal; trench excavation and disposal; protection of existing utilities and repair of damage to existing utilities.

Temporary pavement, permanent pavement patching, and any other necessary restoration will be paid for separately.

FRAMES AND GRATES

Add the following to Article 604.02:

“(f) Frames and grates furnished under this Contract shall be Gray Iron Castings conforming to the Specifications for Gray Iron Castings, ASTM A-48, Class 35. Circular lids for manholes and vaults shall have large (2.5 inch nominal) pick holes. Circular lids for closing catch basins shall have large (2.5 inch nominal) pick holes.

(g) Frames and grates on structures shall be as follows:

Existing inlets and catch basins; new catch basins and inlets on Combined Sewer system:

- Neenah Type R-1712 (390 lbs.) Frame, Open Lid Grate (116 lbs.) with large (2.5 inch nominal) pick holes.

New catch basins and type A inlets for Storm/Relief Sewer work:

- Neenah Type R-3031-B Frame, Sinusoidal Grate,
- Neenah Type R-3036-B Frame, Sinusoidal Grate (for Depressed Curb)

Manholes and vaults:

- Neenah Type R-1712 (390 lbs.) Frame and Extra Heavy Duty Cover (150 lbs.) with large (2.5 inch nominal) pick holes. Valve Vault covers shall be lettered “WATER”.

High Capacity Inlet, Type A

- Neenah Type R-3067-L Frame, Vane Grate

New frames and grates may be requested by the Engineer during adjustment of existing structures.”

Delete Article 604.05 and replace it with the following:

New frames and grates and/or closed lids placed on adjusted and/or rebuilt existing structures will be paid for at the Contract unit price per EACH for FRAME AND GRATES, FRAME AND LIDS, and FRAMES AND LIDS (or GRATES) TO BE ADJUSTED. This work shall be paid for at the Contract unit price per EACH set of frame and lid or grate actually installed. These Contract unit prices shall be payment in full for all materials, labor, and equipment required for: site preparation; excavation; disposal of excess excavated materials including existing structures; frames and grates/lids; adjusting rings, tapered adjusting rings where necessary and concrete setting materials; installation; backfill placement, compaction and compaction testing; testing/inspection; correction of defects; stockpiling reclaimed castings; and all related work required to complete the installation which is not included in other Payment Items.

Frames and grates or closed lids placed on new structures will be considered incidental to the cost of the new structures and will be paid for under the appropriate Pay Items for new structures.

Removed frames and grates shall remain the property of the city and shall be stored in a secured area for pickup by the city.

FRAME AND GRATES TO BE ADJUSTED (SPECIAL)

Description. This work shall consist of removing the existing frame, with grates or lids, on existing drainage in the curb line and replacing it with a new frame and grate at the locations shown on the plans. The work shall be according to the applicable portions of Section 603.

Materials.

The new frame and grate/lid will meet the requirement of Section 604.

The new frame and grate/lid will be identified in the plans as Adjustment Type 1.

Adjustment 1 will include a new Neenah Model 3066 Combination Frame and Grate.

The contractor will remove old adjusting ring and set new masonry rings with grout. The existing frame and grate details are provided in the plans for information only. The contractor shall field verify all dimensions and existing conditions prior to ordering materials.

Basis of Payment. This work will be paid for at the contract unit price per each for FRAMES AND GRATES TO BE ADJUSTED (SPECIAL). The unit price shall include removal and disposal of existing frame and grate/lid, new frame and grate/lid of the type specified, adjusting rings, grout, all equipment, labor, and materials required to complete the work as specified.

LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Delete the first paragraph of Article 107.04 and replace it with the following:

“Owner will obtain approvals of the construction plans from the Metropolitan Water Reclamation District of Greater Chicago (MWRD or MWRDGC) and the Illinois Environmental Protection Agency (IEPA). The Contractor shall at his own expense obtain all required construction permits, licenses, insurance, and other appurtenant approvals or permissions for the execution of this Work; give all necessary notices; pay all fees required; fulfill all permit requirements, including construction standards, bond requirements, and insurance requirements; and comply with all rules, regulations, ordinances, and laws relating to the Work and to the preservation of public health and safety.”

Add the following sentences to Article 107.08:

“Suitable toilet facilities shall be provided at the job site. The facilities and the location of same shall be approved by the Owner and shall be kept in a clean and sanitary condition. Sanitary sewer manholes or construction trenches may not be used for toilet facilities.”

Delete the first sentence of Article 107.09 and replace it with the following:

“The Contractor shall notify the Engineer at least thirty (30) days in advance of the starting of any construction work which might in any way inconvenience or endanger traffic, so arrangements can be made, if necessary, for closing the road and providing suitable detours.”

Add the following paragraphs to Article 107.09:

“The Contractor shall identify and obtain, at their own expense, other sites for storage of materials and equipment. Sites shall be approved by the Owner and shall conform to City zoning and land use regulations.

Contractors shall confine all work activities to the public right-of-ways, except areas designated as tree protection zones and in areas required to be accessed for the purpose of lead water service line replacements to a point located within a home. If, for their convenience, Contractors wish to conduct work activities outside public right-of-ways, including storage of equipment and materials, Contractors shall obtain written permission from affected property owners prior to proceeding with these work activities. Costs of obtaining permission, permits, easements, site preparation, site maintenance, site restoration, and all other expenses associated with work outside right-of-ways, easements, and properties fully executing Property Owner Agreement Forms for full lead water service replacement, shall be borne by the Contractors at no additional expense to the Owner.

Construction materials may not be placed or stored along City streets and other public areas more than five (5) calendar days prior to their planned incorporation into the Project. Excess materials to be incorporated into the Project, including pipe, backfill materials, and other construction materials, not incorporated into the Project shall be removed from the construction site by the end of each day and shall be disposed of in accordance with these Specifications. Temporary storage of materials shall not interfere with curb line storm drainage. Reclaimed construction materials shall be moved to the Contractor's storage areas. Excess spoils shall be removed at the end of each day.

Excess construction equipment not actively engaged in daily work operations shall be stored only in the Contractor's storage areas and not along City streets. Tracked construction equipment shall be moved from place to place in the City only on rubber-tired trailers. “Walking” of tracked equipment between construction areas is expressly prohibited. Refueling trucks shall not be parked on City streets and shall be returned to the Contractor's storage area when not in use.

The Contractor shall provide off-street parking for personal vehicles belonging to his employees, supplier's employees, and subcontractor's employees. These vehicles may not be parked along City streets or in Work areas. No trailers and/or connex containers will be allowed to be stored on/in the City of Evanston R.O.W.

Electrical power for construction operations outside normal project hours shall be obtained through temporary power drops from Commonwealth Edison facilities. The Contractor shall not use engine-driven generators for power at work sites or use other engine-driven equipment outside normal project work hours, including, but not limited to: pumps and compressors, except in emergency situations.

The Contractor shall provide receptacles as necessary at construction areas for depositing waste paper and garbage; and, shall empty these receptacles regularly. The Contractor shall keep the construction site and his storage sites neat and shall promptly clean up any debris that accumulates. All waste materials shall be hauled to a legal waste disposal site of the Contractor's choice.

The Contractor shall conduct his operations so that access to homes and other buildings is maintained at all times when Contractor is not working at that specific location. The Contractor shall cooperate in efforts to notify home and other building owners as to when direct vehicular access to their property will be curtailed and the approximate length of time of such curtailment. Written and/or vocal notification shall be given to affected residents or tenants of the properties not less than 24 hours prior to access curtailment. The Contractor shall maintain access for emergency vehicles to all parts of the construction area at all times.

Where water service connections are made, the Contractor shall not place spoil on the parkway.

The Contractor shall provide for and maintain the flow in all sewers, drains, building or inlet connections and all water-courses which may be met with during the progress of the Work. He shall not allow the contents of any sewer, drain, or inlet connection to flow into trenches, sewers, or other structures to be constructed under the Contract and shall immediately remove and cart away from the vicinity of the Work all offensive matter. The Contractor shall not disrupt the function of individual sanitary services for more than four continuous hours. If construction operations are anticipated to disrupt individual services for more than four hours, the Contractor shall provide for temporary sanitary service for the duration of the disruption.

The Contractor shall provide for and maintain the flow in all water mains or services which may be met with during the progress of the Work. When water mains or services are to be disturbed to the extent that the water will be shut-off, the City of Evanston Utilities Department and all parties being served by the lines involved shall be notified in accordance with Article 561.03, giving them the time and duration of the shut-off period. In cases involving disruption of fire hydrants, the City of Evanston Fire Department shall also be notified in accordance with Article 561.03. The Contractor shall not disrupt the function of individual water services for more than four continuous hours. If construction operations are anticipated to disrupt individual services for more than four hours, the Contractor shall provide for temporary water service for the duration of the disruption.

The Contractor shall promptly notify the proper utility company and all other effected parties of any damage to water, gas, electric, telephone, sewer, and other utility lines and connections caused by the Contractor's operations. The damage shall be immediately repaired at the Contractor's expense. In the case of an accidental breaking of a water main or service line, the repairs of such a break shall have priority over all other operations. The parties whose services are affected by the break shall be notified at once and all assistance given to supply emergency

water where necessary by temporary lines, tank truck, or other means. The Contractor shall maintain an appropriate inventory of the materials for emergency repairs. In the case of an accidental breakage of a street light cable, the Contractor shall submit for approval a licensed electrical contractor to repair any and all damage to the existing street light cables.

The Contractor shall not allow travel upon any street, park, roadway, or alley to be hindered or inconvenienced needlessly, nor shall the same be wholly obstructed without the written permission of the Owner thereof. No construction vehicles shall be driven through or shall be parked in alleys unless so approved by the Engineer. Construction traffic shall be routed on major City through-streets. Construction traffic on minor streets shall be limited as much as is practical. All street closures must be approved by Engineer.

When traffic must be obstructed, the Contractor shall provide proper traffic control as accepted by the Engineer and Owner by placing clearly worded signs announcing such fact with proper barricades, at the nearest cross-streets on each side of such obstructed portion, where travel can pass around the obstruction in the shortest and easiest way. "No parking" signs must be approved by the Engineer and must be POSTED AND DATED at least 48 hours before the intended date of use. "No Parking" signs are to be purchased from the Owner. If vehicles are still parked in "No Parking" areas identified by the Contractor, the Contractor shall notify the Engineer who will contact the Evanston Police to have the vehicles towed away. No towing of vehicles shall be done by the Contractor.

Driveways to fire department buildings, driveways to medical buildings, and driveways to businesses required for continuance of their commerce shall be kept open and maintained in passable conditions at all times unless modified by agreement between the Contractor and the property owner. All agreements between the Contractor and private property owners must be in writing to be considered binding. The Contractor shall give reasonable notice to the owners of all private driveways before interfering with them. Daily construction operations shall be terminated at such locations that the operations of driveways are not obstructed. Driveways shall be passable between the hours of 6:00 p.m. and 9:00 am.

Delete Article 107.17 and replace it with the following:

"107.17 Use of Explosives.

(a) General

Blasting and other uses of explosives will not be permitted under this Contract."

Delete Article 107.18 and replace it with the following:

"107.18 Use of Fire Hydrants. If the Contractor desires to use water from hydrants, he shall fill out an application to the City of Evanston Utilities Department and shall conform to the municipal ordinances, rules, or regulations concerning their use. The Contractor shall obtain a use permit for each hydrant, and shall operate the hydrant properly. The Contractor is required to use an RPZ or appropriate back flow prevention device subject to approval of the City. There is a \$300 deposit on the fire hydrant and all borrowed equipment. Water shall be furnished from hydrants at no cost to the Contractor. However, the Contractor shall restore any damage to the hydrant caused by his use, including settlement.

Fire hydrants shall be accessible at all times to the Fire Department. No material or other obstructions shall be placed closer to a fire hydrant than permitted by municipal ordinances, rules or regulations, or within five (5) feet of a fire hydrant, in the absence of such ordinances, rules or regulations."

Add the following paragraphs to Article 107.20:

“All existing roadway ditches or swales disturbed during construction operations shall be restored to their original cross-section and longitudinal grade, as approved by the Engineer. Any settlement caused by sewer or water main trenches shall be refilled and the original grades maintained by the Contractor for a period of one year from the date of final completion of the Project. Any property damage caused by trench excavation or augering operations, including settlement, shall be restored at Contractor's expense.”

Existing roadways, driveways, sidewalks, curbs, utilities, structures, landscaping, site objects, and other site improvements not indicated to be removed and/or replaced as part of the Project which are damaged by Contractor's operations shall be repaired to a condition equal or better than that prior to the start of construction; or, if deemed un-repairable by the Owner, removed and replaced by the Contractor at no cost to the Owner in accordance with the terms of the Project specifications, Drawings, applicable codes, ordinances, and technical standards.

The correction of defects in the Work performed by the Contractor shall be done at no additional cost to the Owner and in accordance with the terms of the Project specifications, Drawings, applicable codes, ordinances, and technical standards.

Add the following paragraph to Article 107.25:

“Prior to commencement of construction operations, the Contractor shall prepare a written inventory of existing traffic control and other signage along the routes of construction. This inventory shall list the location, wording, and general condition of signage. This inventory shall be submitted to the Engineer upon completion and before any signage is removed for construction activities. The Contractor shall remove all existing traffic control signs, store these signs in a manner, which prevents damage, and reinstall them as soon as possible following installation of new sewers as coordinated by the Engineer.”

i. Procedure for Resolving Property Damage Disputes

If the Contractor receives a claim for property damage allegedly caused by his performance of the Work under this Contract, the Contractor shall, within five (5) calendar days of receipt of such claims:

Acknowledge the claim to the property owner.

Send a copy of the said claim and acknowledgment to Engineer.

If the claim is not settled (or the Contractor does not agree to settle the claim) within five (5) calendar days, the Contractor shall:

Forward the claim to the Contractor's insurance carrier.

Require his insurance company to forward to Engineer an acknowledgment of receipt of the claim.

The Contractor and insurance carrier shall either settle or deny claims within sixty (60) calendar days of initial receipt of the claims. The insurance carrier and Contractor shall notify the Engineer of claims settled and denied, including the terms of the settlement or reasons for denial. The Contractor shall advise property owners of the decision to deny their claims and shall include in the Notice of Denial the name and address of the person authorized to accept service of process on behalf of the Contractor.

When a claim is allowed in any amount, Contractor shall, within thirty (30) calendar days of the award, pay to the property owner the amount of the award. If the Contractor does not make these payments to the property owner within the thirty (30) calendar day period, the Owner shall be authorized to make these payments for the Contractor and then deduct the amounts paid from the next payment due the Contractor under this Contract.”

Add the following paragraphs to Article 107.30:

“The Contractor assumes full responsibility for the safekeeping of all materials and equipment and for all unfinished work until final acceptance by the Owner, and if any of it is damaged or destroyed from any cause, the Contractor shall replace it at his own expense.

The Contractor shall indemnify and save harmless the Owner against any liens filed for nonpayment of his bills in connection with the Contract work. The Contractor shall furnish the Owner satisfactory evidence that all persons who have done work or furnished materials, equipment or service of any type under this Contract have been fully paid prior to the acceptance of the Work by the Owner.

The Contractor shall erect and maintain such barriers and lights and/or watchmen as will protect and warn pedestrians and vehicles, and prevent access of unauthorized persons to the site so as to prevent accidents as a consequence of his work.

The Contractor shall indemnify and hold harmless the Owner, the Owner's employees, the Engineer, and the Engineer's employees from any and all liability, loss, cost, damages and claims, and expense (including reasonable attorney's fees and court costs) resulting from, arising out of, or incurred by reason of any claims, actions, or suits based upon or alleging bodily injury, including death, or property damage arising out of, or resulting from the Contractor's operations under this Contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. The Contractor shall obtain insurance for this purpose, which shall insure the interests of the Owner and Engineer as the same may appear and shall file with the Owner and Engineer certificates of such insurance.

The Contractor shall protect the Owner's property and adjacent property from injury or loss resulting from his operations. Objects sustaining such damage shall be replaced to the satisfaction of the Owner and Engineer; the cost of such repairs shall be borne by the Contractor.

The Contractor shall be completely responsible for protecting his work from vandalism. Any vandalized concrete shall be repaired and/or replaced as directed by the Engineer and at the Contractor's expense.”

Delete the second and fourth paragraphs of Article 107.35.

Delete Article 107.40 in its entirety and replace with the following:

Unknown Utilities. The requirements stated in Article 107.37 for known utilities shall apply to unknown utilities. No additional compensation will be allowed for any delays, inconveniences, or damages sustained by the Contractor due to the presence of any claimed interference from unknown utility facilities or any adjustment of them, except as specifically provided in the contract.

Definition. An unknown utility is defined as an active or inactive underground transmission facility (excluding service connections) which is either:

(1) Located underground and (a) not shown in any way in any location on the plans; (b) not

identified in writing by the City to the Contractor prior to the letting; or (c) not located relative to the location shown in the contract within the tolerances provided in 220 ILCS 50/2.8 or Administrative Code Title 92 Part 530.40(c).

(2) Located above ground or underground and not relocated as provided in the contract.

Add Article 107.44, which shall read as follows:

“107.44 Water Control. The Contractor shall perform grading and other operations to maintain site drainage. Surface water shall not be allowed to accumulate in excavations. The Contractor shall dispose of surface and subsurface water in a legal manner. He shall not allow mud, silt, or debris to flow into any surface water area or body other than in compliance with the State Water Quality Standards. Where the Contractor's operations disturb existing combined sewers, the Contractor shall provide temporary bulkheads and pumping facilities as necessary to maintain the combined sewers, connected building services and storm water inlet leads in full operation, including transport of the maximum dry-weather and wet-weather flow of which the existing sewer is capable. Combined wastewater shall not be permitted to flow along streets, public right-of-ways, private property, trench areas or inactive relief sewers. All earthworks, moving of equipment, water control of excavations, and other operations likely to create silting, shall be conducted so as to minimize pollution to watercourses or water storage areas. Under no circumstances shall the Contractor discharge pollutants into any watercourse or water storage area.”

Add Article 107.45, which shall read as follows:

“107.45 Overnight Protection of Work. The Contractor shall adequately backfill, cover with appropriate plates, or suitably fence and barricade all open excavations at the completion of each day's work. Open-cut excavations shall be reduced to a maximum length of thirty feet overnight. Excavations shall not block roadways or driveways. Open ends of sewers being installed shall be bulk-headed overnight with watertight plugs to prevent entrance of soils, entrance of groundwater, and/or entrance by the public. The Contractor shall protect all excavations from public access. All shafts for open-cut work shall be fully covered during non-working hours and during working hours when not being actively used for that day's construction.”

PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT (SPECIAL)

This work shall consist of constructing Portland concrete cement driveway pavement according to Section 423 of Standard Specifications and as modified herein.

Add the following paragraphs to Article 423.02:

“Materials: - Materials for concrete shall be in accordance with Section 420 as applicable. Class SI concrete shall be used. Forms shall be a minimum of 2” x 8” lumber, held in place by stakes or braces with the top edges true to line and grade. The aggregate base course shall be four (4”) inches thick of crushed limestone gradation CA-6 constructed in accordance with Section 351 of the Standard Specifications. The driveway pavement shall be six (6”) inches or eight (8”) inches thick. Three-quarter (3/4”) inch thick expansion joint material shall be placed between the curb and the full width of the proposed driveway. Contraction joints shall be provided. Concrete shall achieve a minimum concrete strength of 3500 psi within 48 hours of placement, high-early strength concrete may be used.

Curing and Protection: Curing shall be in accordance with Article 1022.01. Curing compound shall be Type III. Protect all surfaces from sun. During hot weather, keep temperature of concrete below 90 degrees Fahrenheit. During cold weather, keep temperature of concrete between 50 degrees F and 70 degrees F for 3 to 5 days. Protect from frost and rapid drying for 6 days. The Contractor shall be solely responsible for protecting his work from vandalism. All vandalized concrete work shall be removed and replaced at the Contractor's expense.”

Delete Article 423.11 and replace it with the following paragraphs:

This work will be paid for at the Contract unit price per SQUARE YARD for PORTLAND CEMENT CONCRETE (PCC) DRIVEWAY PAVEMENT (SPECIAL), of the thickness specified, measured in place.

The Contract unit price for PCC DRIVEWAY PAVEMENT shall be payment in full for all materials, labor, and equipment required for: final grading of aggregate base course; reinforcement, if required; pavement placement, curing, and protective coating; and all related work required to complete the installation which is not included under other Payment Items.

PCC DRIVEWAY PAVEMENT installation outside the limits shown on the Drawings due to damage caused by Contractor's operations or for Contractor's purposes shall be considered incidental to this work and no separate payment shall be made.

PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH

Add the following sentences to Article 424.01:

“The Work shall also include adjustments to surface elements such as buffalo boxes, valve covers, manhole covers, vault covers, etc. to final grades.”

Add the following sentences to Article 424.02:

“Curing shall be in accordance with Article 1022.01. Curing compound shall be Type III. Protect all surfaces from sun. During hot weather, keep temperature of concrete below 90 degrees Fahrenheit. During cold weather, keep temperature of concrete between 50 degrees F and 70 degrees F for 3 to 5 days. Protect from frost and rapid drying for 6 days.”

Add the following sentences to Article 424.04:

“The Aggregate Base Course required for necessary grading will not be paid for separately and constructed in accordance with section 351 of the Standard Specifications.”

Add the following paragraphs to Article 424.06:

“Concrete placement will be permitted if air temperature is 40 degrees Fahrenheit or higher. Concrete pours shall be ended at expansion or control joints. Partial slabs shall not be allowed. The surface shall be divided by control joints extending to the depth of the slab. Control joints shall be tooled first, saw-cut to proper depth and shall be spaced at 5-foot or other uniform intervals as directed by the Engineer. All edges and intermediate joints of sidewalks shall be shaped with an edging tool having a ½ inch radius. Surfaces of sidewalks shall have a light broom finish, except handicapped ramps at intersections, which shall be finished as shown on the Drawings.

All sidewalk removed shall be formed within 3 working days of removal. New sidewalk shall be poured within 1 working day of being formed. The forms shall be removed within 1 working day after the concrete pour and the restoration adjacent to new sidewalk shall be done with 24 hours after removal of the forms. All low areas shall be filled in to match the surrounding grades within 72 hours of the sidewalk being poured.

The Contractor shall be solely responsible for protecting his work from vandalism. All vandalized concrete work shall be removed and replaced at the Contractor's expense”

DETECTABLE WARNINGS

Description. This work shall consist of furnishing and installing prefabricated “red” linear and radial detectable warning panels from approved material suppliers in the new Portland Cement Concrete (PCC) sidewalk at locations as directed by the ENGINEER. The detectable warning panels shall be the “cast-in-place” model.

Materials. Approved material suppliers are as follows:

- a. Armor-Tile Tactile Systems. www.armor-tile.com
- b. ADA Solutions. www.adatile.com (Composite Panel Paver System)
- c. Detectile Corporation. www.detectile.com
- d. Access Products, Inc. (888-679-4022)/ Supplier (630-689-7574)
- e. Detectable Warning Systems, Inc. (866-999-7452)
- f. TufTile, Inc. www.TUFTILE.com (888-960-8897)

The Contractor shall be responsible for furnishing the specified number of detectable warning panels from the approved list of material suppliers. Prior to purchasing the detectable warnings, the Contractor shall submit for review and approval by the ENGINEER the proposed product information consisting of the following:

- a. Manufacturer’s certification stating the product is fully compliant with
- b. the ADAAG.
- c. Manufacturer’s five year warranty.
- d. Manufacturer’s specifications including the required materials, equipment, and installation procedures. Products that are colored shall be colored their entire thickness.
- e. Color chart (“red” color to be determined by the ENGINEER).
- f. Sample Product Panel (24”x48” linear, 24”x48” radial).

Any damaged panel shall be rejected and shall be replaced at no additional expense to the Owner.

Construction Requirements. The Contractor shall install the panels in accordance with the manufacturer’s recommendations and details. The panels shall be installed during the construction of the new PCC sidewalk and shall be an integral part of the walking surface. The top of the panel shall be flush with the surface of the sidewalk and only the actual domes shall project above the walking surface.

The detectable warning panels shall be installed at curb ramps, medians and pedestrian refuge islands, at-grade railroad crossings, transit platform edges, and other locations where pedestrians are required to cross a hazardous vehicular way.

Detectable warnings shall also be installed at alleys and commercial entrances when permanent traffic control devices are present.

Method of Measurement and Basis of Payment. This work will be measured and paid for at the contract unit price per square foot for DETECTABLE WARNINGS which work includes furnishing and installing the detectable warning per the manufacturer’s recommendations and as described herein.

FAILURE TO COMPLETE PLANT CARE AND ESTABLISHMENT WORK ON TIME

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

- \$50.00 per tree/per day
- \$40.00 per large shrub/per day
- \$35.00 per small shrub/per day
- \$20.00 per vine/per day
- \$20.00 per perennial/per day
- \$20.00 per sq yd sod/per day

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

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

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

PROTECTION OF EXISTING TREES

The Contractor shall be responsible for taking measures to minimize damage to the tree limbs, tree trunks, and tree roots at each work site. All such measures shall be included in the contract price for other work except that payment will be made for TEMPORARY FENCE, TREE TRUNK PROTECTION, TREE ROOT PRUNING, and TREE PRUNING.

The Contractor shall coordinate with the village forester or arborist (Roadside Development Unit 847.705.4171) prior to the start of construction to do a walk through and determine which trees or shrubs are to be protected, method of protection, and determine type of work to minimize damage to the tree.

All work, materials and equipment shall conform to Section 201 and 1081 of the Standard Specifications except as modified herein.

A. Earth Saw Cut of Tree Roots (Root Pruning):

1. Whenever proposed excavation falls within a drip-line of a tree, the Contractor shall:
 - a. Root prune 6-inches behind and parallel to the proposed edge of trench a neat, clean vertical cut to a minimum depth directed by the Engineer through all affected tree roots.
 - b. Root prune to a maximum width of 4-inches using a reciprocating saw blade for cutting tree roots or similar cutting machine. Trenching machines will not be permitted.
 - c. Exercise care not to cut any existing utilities.
 - d. If during construction it becomes necessary to expose tree roots which have not been pre-cut, the Engineer shall be notified and the Contractor shall provide a clean, vertical cut at the proper root location, nearer the tree trunk, as necessary, by means of hand-digging and trimming with chain saw or hand saw. Ripping, shredding, shearing, chopping, or tearing will not be permitted.
 - e. Top Pruning: When thirty percent (30%) or more of the root zone is pruned, an equivalent amount of the top vegetative growth or the plant material shall be pruned off within one (1) week following root pruning.
2. Whenever curb and gutter is removed for replacement, or excavation for removal of or construction of a structure is within the drip line/root zone of a tree, the Contractor shall:
 - a. Root prune 6-inches behind the curbing so as to neatly cut the tree roots.
 - b. Depth of cut shall be 12 inches for curb removal and replacement and 24 inches for structural work. Any roots encountered at a greater depth shall be neatly saw cut at no additional cost.

- c. Locations where earth saw cutting of tree roots is required will be marked in the field by the Engineer.
3. All root pruning work is to be performed through the services of a licensed arborist to be approved by the Engineer.

Root pruning will be paid for at the contract unit price each for TREE ROOT PRUNING, which price shall be payment for all labor, materials, and equipment.

Tree limb pruning will be paid for at the contract unit price per each for TREE PRUNING (1 TO 10 INCH DIAMETER) and/or TREE PRUNING (OVER 10 INCH DIAMETER), which price shall include labor, materials, and equipment.

B. Temporary Fence:

1. The Contractor shall erect a temporary fence around all trees within the construction area to establish a "tree protection zone" before any work begins or any material is delivered to the jobsite. No work is to be performed (other than root pruning), materials stored, or vehicles driven or parked within the "tree protection zone".
2. The exact location and establishment of the "tree protection zone" fence shall be approved by the Engineer prior to setting the fence.
3. The fence shall be erected on three sides of the tree at the drip-line of the tree or as determined by the Engineer.
4. All work within the "tree protection zone" shall have the Engineer's prior approval. All slopes and other areas not regarded should be avoided so that unnecessary damage is not done to the existing turf, tree root system ground cover.
5. The grade within the "tree protection zone" shall not be changed unless approved by the Engineer prior to making said changes or performing the work.

The fence shall be similar to wood lath snow fence (48 inches high), plastic poly-type or and other type of highly visible barrier approved by the Engineer. This fence shall be properly maintained and shall remain up until final restoration unless the Engineer directs removal otherwise. Tree fence shall be supported using T-Post style fence posts. **Utilizing re-bar as a fence post will not be permitted.**

Temporary fence will be paid for at the contract unit price per foot for TEMPORARY FENCE, which price shall include furnishing, installing, maintaining, and removing.

C. Tree Trunk Protection:

1. The Contractor shall erect trunk protection around all trees within the construction area to prevent damage to the trunk of the tree when temporary fence is not an option before any work begins or any material is delivered to the jobsite. No work is to be performed (other than root pruning), materials stored, or vehicles driven or parked within the "tree protection zone".
2. The 2 inch x 8 inch x 8 foot boards shall be banded continuously around the

trunk of each tree to prevent scarring of the trees shown on the plans or designated by the Engineer.

3. Multi-stem trees, saplings, and shrubs to be protected within the area of construction, temporary fence may be used for trunk protection.

Tree trunk protection will be paid for at the contract unit price per each for TREE TRUNK PROTECTION), which price shall include materials, installation, and removal.

D. Tree Limb Pruning:

1. The Contractor shall inspect the work site in advance and arrange with the Roadside Development Unit (847.705.4171) and/or village forester or arborist to have any tree limbs pruned that might be damaged by equipment operations at least one week prior to the start of construction. Any tree limbs that are broken by construction equipment after the initial pruning must be pruned correctly within 72 hours.
2. Top Pruning: When thirty percent (30%) or more of the root zone of a tree is pruned, an equivalent amount of the top vegetative growth or the plant material shall be pruned off within one (1) week following root pruning.

Tree limb pruning will be paid for at the contract unit price per each for TREE PRUNING (1 TO 10 INCH DIAMETER) and/or TREE PRUNING (OVER 10 INCH DIAMETER), which price shall include labor, materials, and equipment.

E. Removal of Driveway Pavement and Sidewalk:

1. In order to minimize the potential damage to the tree root system(s), the Contractor will not be allowed to operate any construction equipment or machinery within the "tree protection zone" located between the curb or edge of pavement and the right-of-way property line.
2. Sidewalk to be removed in the areas adjacent to the "tree protection zones" shall be removed with equipment operated from the street pavement. Removal shall be done by excavation equipment, or by hand, or a combination of these methods. The method of removal shall be approved by the Engineer prior to commencing any work.
3. Any pavement or pavement related work that is removed shall be immediately disposed of from the area and shall not be stockpiled or stored within the parkway area under any circumstances.

F. Backfilling:

1. Prior to placing the topsoil and/or sod, in areas outside the protection zone, the existing ground shall be disked to a depth no greater than one (1"), unless otherwise directed by the Engineer. No grading will be allowed within the drip-line of any tree unless directed by the Engineer.

G. Damages:

1. In the event that a tree not scheduled for removal is injured such that potential irreparable damage may ensue, as determined by the Roadside Development Unit, the Contractor shall be required to remove the damaged tree and replace it on a three to one (3:1) basis, at his own expense. The Roadside Development Unit will select replacement trees from the pay items already established in the contract.
2. The Contractor shall place extreme importance upon the protection and care of trees and shrubs which are to remain during all times of this improvement. It is of paramount importance that the trees and shrubs which are to remain are adequately protected by the Contractor and made safe from harm and potential damage from the operations and construction of this improvement. If the Contractor is found to be in violation of storage or operations within the "tree protection zone" or construction activities not approved by the Engineer, a penalty shall be levied against the Contractor with the monies being deducted from the contract. The amount of the penalty shall be two hundred fifty dollars (\$250.00) per occurrence per day.

RECYCLING RECEPTACLE

Description.

This work shall consist of furnishing and installing per manufacturers recommendation the following:

1. Manufacturer: Global Industrial, www.globalindustrial.com, Model: #T9722618006BL or
2. Manufacturer: Victor Stanley, Inc., www.victorstanley.com; Model: #RB-36 or
3. Manufacturer: Wausau Tile, www.wausautile.com; Model: #MF3212

Support Frames: Steel; welded.

Recycling Receptacles:

1. Capacity 36-gallon
2. Dimensions: 36”H x 28”Dia
3. Design: Fully welded durable receptacle features long lasting flat bar steel body with a polyester powder coat finish that deters graffiti and vandalism. Three recycling logos on lid and a RECYCLE decal on body for clear identification. Metal band top for extra strength. Recycling garbage can endures extreme climate conditions. Recycle waste container includes security cable, anchor kit and black rigid plastic liner.
4. Installation Method: surface mount.

Material Finish: Powder coated Blue with white ‘Recycle’ markings

Options: Anchor kit and black rigid plastic liner

METHOD OF MEASUREMENT: Furnishing and installing recycling receptacles and all associated equipment and materials will be measured in place for each recycling receptacle.

BASIS OF PAYMENT: Furnishing and installing recycling receptacles will be paid for at the contract unit price per EACH for RECYCLING RECEPTACLES.

REMOVING FIRE HYDRANTS

Add the following paragraphs to Article 564.01:

"This work shall also consist of removing all designated hydrants on water mains which are to be abandoned as a part of this project."

Add the following paragraph to Article 564.02:

All backfill under and within two (2) feet of the proposed paved areas excavated as a result of this work will conform to the specifications for TRENCH BACKFILL as herein provided."

Add the following paragraphs to Article 564.03:

"All pavements will be sawed to a full depth prior to the removal of the pipe up to auxiliary valve and valve box. At the direction of the Owner, the Contractor shall cover the abandoned fire hydrants with burlap bags until the Contractor removes the abandoned fire hydrants. The hydrant will be removed completely with the bottom section. Removal shall include the pipe and valve from the fire hydrant to the upstream of the auxiliary valve. The existing pipe shall be plugged. All excavated areas shall be backfilled and compacted under and within two (2) feet of all paved areas with trench backfill. All other excavated areas will be backfilled with suitable material to existing grade within parkway areas immediately following hydrant and auxiliary valve removal."

Existing fire hydrant/auxiliary valve assemblies removed (as part of water main relocation) will be paid for at the Contract unit price per EACH for FIRE HYDRANT WITH AUXILIARY VALVE TO BE REMOVED for the type and size specified and FIRE HYDRANTS TO BE REMOVED. This Contract unit price shall be payment in full for all materials, labor, and equipment required for: site preparation; excavation; disposal of excess excavated materials; capping water mains which will remain in operation; thrust-blocking; backfill placement, compaction and compaction testing; testing/ inspection; correction of defects; stockpiling reclaimed hydrants and auxiliary valves; and, all related work required to complete the installation which is not included in other Payment Items.

This item shall not include the costs of pavement, sidewalk, driveway, and curb/gutter removal and disposal necessary for removal of hydrants and valves. Roadway, sidewalk, driveway, and curb/gutter removal/replacement shall be paid for in accordance with the appropriate Payment Items. Fire hydrants shall remain the property of the city and shall be stored in a secured area for pickup by city.

REMOVING OR FILLING (ABANDONING) EXISTING MANHOLES, CATCH BASINS AND INLETS

Add the following sentences to Article 605.01:

“This work shall also consist of all work necessary to remove or fill existing valve vaults so designated on the Drawings. The terms “fill”, “remove”, and “abandon” shall be interchangeable and shall consist of removing the upper portion of an existing structure, filling unused pipes, sealing pipe connections, and filling the remainder of the structure with Trench Backfill sand (FA-6), compacted to the satisfaction of the Engineer.”

Articles 605.03 and 605.04 shall apply with the following modifications:

“The Contractor shall make his own investigation to determine the existence, nature and location of all sewers and appurtenances thereto within the limits of the improvement. The Contractor shall be held responsible for any damage to existing sewers. All pavements will be sawed to a full depth prior to any casting replacement/adjustment, structure removal, or filling operation. Connecting pipes shall be cut one joint from the existing structure to be removed/filled. Structures in private paved areas, parkways and other grassed areas shall be removed a minimum of 2-feet below final grade and structures in public streets shall be removed a minimum of 6-feet below final grade. Pipes connected to these structures shown to be abandoned and shall be filled with CLSM materials in accordance with Article 550.05. Remaining portions of existing structures may be filled with Case I trench backfill material in accordance with Section 208 or may be filled with CLSM material in accordance with Article 550.05, at Contractor's option. Structures shall be pumped out and cleaned of all mud and debris before the fill material is placed. The remainder of the excavation shall be backfilled in accordance with Section 208.”

Delete Article 605.06 and replace it with the following:

“This work will be paid for at the Contract unit price per EACH for catch basins, inlets, valve vaults, valve boxes, and manholes that are to be abandoned, filled, or removed, as counted in the field. These Contract unit prices shall be payment in full for all materials, labor, and equipment required for: site preparation, including removal, replacement and/or repair of fences and other site objects; excavation, including removal and disposal of existing sewer pipes, structures, and excess excavated materials; protection, support and repair of damage to existing utilities; saw-cutting, removal and disposal of existing pavement; excavation, removal and disposal of removal wastes; supply, placement, compaction, and compaction testing of backfill, stockpiling reclaimed castings; and all related work required. For items abandoned, the price shall include the cost of removal of frames/covers, adjusting collars and structure down to 24-inches below existing grassed surface or 72-inches below existing pavement as applicable, disposal of wastes, concrete bulkheads, and filling of remaining structure as specified.”

STORM (COMBINED) SEWERS

Delete Article 550.01 and replace it with the following:

“550.01 Description. This work shall consist of constructing combined, relief, and storm sewers of the required inside diameter with necessary fittings and appurtenances.”

Delete Article 550.03 and replace it with the following:

“550.03 Pipe Material Requirements. Pipes used in sewer construction shall be as follows and as indicated on the drawings. Pipes shall be of uniform material and structural class between structures:

- (a) Combined sewers 4 to 15 inches in diameter and more than 5 feet deep; relief sewers 4 to 15 inches in diameter and more than 5 feet deep; and sanitary service connection piping other than specified in Paragraph d following - Poly-vinyl chloride (PVC) pipe conforming to ASTM D-3034 having joints conforming to ASTM D-3212. Pipe shall be a solid wall product not thinner than SDR 26 with minimum stiffness of 115 psi. Where minimum separation requirements between sewer pipe and water main are not met, the use of Poly-vinyl chloride (PVC) pipe conforming to AWWA C-900 and rated for 150 psi (DR18) having joints conforming to ASTM-3139 and ASTM F-477 is required.
- (b) Combined sewers 16 to 24 inches in diameter and more than 5 feet deep; and, relief sewers 16 to 24 inches in diameter and more than 5 feet deep (alternate bid item) - Poly-vinyl chloride (PVC) pipe conforming to ASTM F-679 having joints conforming to ASTM D-3212 and a solid wall not thinner than SDR26 with minimum stiffness of 115 psi may be used in lieu of DR25 pipe at Contractor's option. Where minimum separation requirements between sewer pipe and water main are not met, the use of Poly-vinyl chloride (PVC) pipe conforming to AWWA C-905 and rated for 165 psi (DR25) having joints conforming to ASTM-3139 and ASTM F-477 is required.
- (c) Catch basin and inlet leads; relief sewers 4 to 24 inches in diameter and 5 feet or less in depth or where indicated on drawings; sanitary sewer service connection piping crossing under other utilities; and, combined sewers 4 to 24 inches in diameter where indicated on drawings - Ductile iron pipe conforming to ANSI 21.51 (AWWA - C151); of a minimum thickness Class 50 as designed per ANSI A21.50 (AWWA - C150) except as designated on the Contract Drawings; tar (seal) coated per ANSI A21.4(AWWA - C104); and, with push-on joints per ANSI A21.11(AWWA - C111).”

Add the following paragraphs to Article 550.04:

“The width and depth of trench excavation for all pipes shall be as shown on the Drawings. Along the proposed pipe alignments indicated on the Drawings, Contractor shall remove the surface materials only to such widths as will permit a trench to be excavated, which will afford sufficient room for efficient and proper construction. Where sidewalks, driveways, pavements, and curb/gutter are encountered, care shall be taken to protect such against fracture or disturbance beyond these working limits.

Prior to the placement of all pipes, bedding shall be placed on the trench bottom, compacted and shaped to receive the pipe. Bedding shall consist of crushed gravel or crushed limestone conforming to CA-7, CA-11, or CA-13 of Section 1004 for RCP and DIP sewers, and ASTM D2321 Class IB for PVC Sewers. Geotextile filter fabric, Trevira 1114 or equal, shall be provided to encase

the pipe bedding and initial pipe cover in trenches through wet, soft, and/or granular native soils and elsewhere as directed by Engineer. The geotextile fabric shall be placed as shown on the Drawings.

The trench shall be excavated to the alignment and depth required and may be advanced up to 50 feet ahead of the pipe laying operation during working periods and up to 20 feet ahead of pipe laying operations during non-work periods. Trenching operations shall be terminated at the end of each day's work in locations which do not obstruct roadways, alleys or driveways. In general, the length of open trench shall not exceed 70 feet from the forward cut to the completely backfilled trench nor shall more than one street crossing be obstructed by the same trench at any one time. Open cut excavations shall be reduced to a maximum length of 30 feet for overnight protection.

Roadway restoration activities, except installation of final HMA surface course, shall be carried out such that no more than 1,000 lineal feet of permanent roadway is removed at any one time for each open-cut pipe installation operation; no more than 1,000 feet of permanent roadway is removed per active mainline sewer or water main installation crew; and, such that the period that the permanent roadway removed at any location does not exceed thirty (30) calendar days, without the approval of the Engineer. In no case, however, shall the total length of permanent roadway removed exceed 2,500 lineal feet regardless of the number of open-cut sewer or water main construction operations (active mainline crews) underway. Roadways shall be reinstated as soon as possible after sewer and water main installation.

Contractor shall conduct dewatering as necessary to maintain the water table level below the trench bottom prior to and during pipe laying, jointing and backfilling. The dewatering operation, however accomplished, shall be carried out so that it does not destroy or weaken the strength of the soil under or alongside the trench.

Contractor shall divert all sanitary flow around the construction area by means of flumes or temporary by-pass pumping systems. Pumping shall be sufficient such that no backing up of sanitary flow will occur. Contractor shall be responsible for all damage resulting from negligence in creating restrictions to flow within the sewer system. Contractor shall not interrupt the flow from individual sanitary services for more than four hours. Sanitary flows shall not be diverted into catch basins or relief sewers.

Open-cut trenches shall be supported as required to fully protect life, existing utilities, adjacent structures, pavements, and the Work. Trench support is an integral part of the Contractor's means and methods. The Contractor shall employ the services of a registered (Illinois) Structural Engineer, registered (Illinois) Professional Engineer, Geotechnical Engineer, and other professionals as necessary to prepare designs of support systems. The support systems shall conform to Federal laws, State laws and municipal ordinances. The minimum protection shall conform to the recommendations in O.S.H.A. Safety and Health Standards for Construction. A sand box or trench shield may be used as permitted by O.S.H.A. For sewers located in unpaved areas, augering construction shall be made where the sewer passes within a distance of tree diameter times 8 or 8 feet, whichever is greater, from trees. For sewers located in paved areas, augering construction shall be made where the sewer passes within a distance of tree diameter times 5 or 8 feet, whichever is greater, from trees. The auger shall be approximately 6 inches larger than the outside diameter of the pipe bell and extend not less than 10 feet or as shown on drawings, whichever is greater, from the base of the tree in both directions. The annular space between pipe and auger wall shall be filled with granular material. Augering work shall be considered incidental to the construction of sewers and no separate payment shall be made."

Delete the first paragraph of Article 550.05 and replace it with the following:

"Sewers designated on the Drawings to be abandoned shall be filled with Controlled Low-Strength

Material (CLSM), unless otherwise specified by the Engineer. CLSM shall meet the following requirements:

- (a) Materials. CLSM shall consist of a mixture of Portland cement, fly ash, fine aggregate, and water proportioned to provide a backfill material that is self-compacting and capable of being excavated with hand tools if necessary at a later date. All materials shall meet the following requirements:

Portland Cement, Type I	Section 1001
Water	Section 1002
Fine Aggregate (Natural Sand)	Section 1003.02
Fly Ash	Section 1010.02

- (b) Proportioning. Materials for CLSM shall be proportioned as follows:

Portland Cement	50 lbs.
Fly Ash	300 lbs. (if Type F) or 200 lbs. (if Type C)
Fine Aggregate (Saturated Surface Dry)	2900 lbs.
Water	45-65 gallons

These quantities will yield approximately one cubic yard of CLSM of the proper consistency. The flowability shall be observed by the Engineer and the water content adjusted within the specified limits to produce desired results. The CLSM shall be ready-mixed as specified in Section 1020.11 of the Standard Specifications. Sufficient mixing capacity shall be provided to permit the CLSM to be placed without interruption. The mixer drum shall be completely emptied prior to the initial batch of CLSM to ensure that no additional cement fines are incorporated into the mix.

- (c) Placement. The CLSM shall be discharged directly from the truck into the space to be filled, or by other methods approved by the Engineer.”

Add the following paragraphs to Article 550.06:

“Laying of sewer pipe shall be accomplished to line and grade in the trench only after it has been dewatered and the foundation and/or bedding have been prepared. Mud, silt, gravel, and other foreign material shall be kept out of the pipe and off joint surfaces. All pipe laid shall be retained in position so as to maintain alignment and joint closure until sufficient backfill has been completed to adequately hold the pipe in place.

Pipe alignment shall not deviate by more than 0.5 inch or 0.25 inch per foot of diameter, whichever is greater, from true vertical alignment; or 2.0 inches or 0.5 inch per foot of diameter, whichever is greater, from true horizontal alignment, prior to and following placement and compaction of backfill. Sewers found to vary from these alignment criteria shall be excavated and relayed or otherwise corrected as approved by the Engineer.

Contractor shall check line and grade of each pipe section installed with laser beam; and, in the event they do not meet specified limits described hereinafter, the work shall be immediately stopped, the Engineer notified, and the cause remedied before proceeding with the Work.

Installation of PVC sewers shall conform to ASTM D2321. After installing any sewer on the bedding and the joint made, backfilling to one foot above the crown of the pipe shall be placed to form a granular encasement. The pipe shall be laid so that it will be uniformly supported for the entire length of its pipe barrel fully bearing on the aggregate cradle. No blocking of any kind will be permitted to adjust the pipe to grade.

All branch sewer connections shall meet the structural, jointing, and water-tightness requirements for the mainline pipe to which they are made. Break-in-connections will not be allowed. Connections of pipe 18-inches in diameter or smaller to RCP may be made using cast-in or cored-in flexible couplings meeting ASTM C-923, or precast wye or tee fittings as approved by Engineer. Connections of pipe larger than 18-inch diameter to RCP shall be with pre-cast wye or tee fittings as approved by Engineer. Connections to PVC or DIP shall be made using factory-made wye or tee fittings. Tapping saddles may NOT be used for connections to PVC pipe. Connections may be tees or wyes at Contractor's option, unless shown otherwise on the Drawings.

Plugs for pipe branches, stubs, or other open ends, which are not to be immediately connected, shall be made of an approved material and shall be secured in place with a joint comparable to the main line joint. Stoppers may be of an integrally cast breakout design.

Shear resistant couplings as manufactured by Fernco Inc. shall be used for connections of new pipe to existing pipe, and where dissimilar pipe and joint materials are encountered. Connections may not be made with only stainless steel shear rings. An associated bushing is required at all connections.”

Add the following paragraphs to Article 550.07:

“Covering of the pipe to a depth of one-foot over the top of the pipe shall be performed by a method which assures that materials fill and support the haunch areas of the pipe, encasing the pipe to the limits as indicated. The aggregate shall be placed in layers not exceeding six inches (6”) in thickness and carried up at the same levels on both sides of the pipe. Each layer shall be thoroughly compacted and tamped under and around the pipe. Cover and backfill shall be compacted in accordance with Method 1 or Method 3, and shall achieve a Standard Proctor Density of not less than 95 percent as tested in accordance with Section 106.

To facilitate compaction by Method 3, the Contractor shall provide a well point/pump system, sump pits and pumps, or other proactive procedures approved by the Engineer for extracting the water used for backfill compaction from the pipe bedding material. The spacing between extraction points shall be sufficient to assure adequate water velocities for the jetting process and to assure that the backfill and/or bedding will not become over-saturated such that compaction is lost. In any case, jetting water extraction points shall be located not more than 400 feet apart.

Following completion of the backfilling process, the final layer of backfill shall also be inundated with water in accordance with Method 2. The Contractor shall repair any subsidence which occurs prior to paving by adding additional backfill material and compacting in accordance with Method 1.

Contractor shall repair any subsidence greater than 1½ inches which occurs following paving by removing paving, installing additional backfill, compacting in accordance with Method 1, and re-installing paving. Contractor shall repair any subsidence 3-inches or less which occurs following base course paving by installing additional leveling binder immediately prior to installation of the bituminous surface course. Contractor shall repair any subsidence, which occurs following installation of bituminous surface course by installation of additional surface course. The unsettled pavement surrounding the subsidence area shall be milled to a depth of 1½ inches for at least the full lane width each way of the subsidence transverse to the direction of traffic and 20-feet each way of the subsidence longitudinal to the direction of traffic.

Concrete pavement displaced more than ½ inch by subsidence shall be removed and replaced to the nearest contraction joints, expansion joints, curbs, or transitions to other pavement types, as applicable. The cost of correcting subsidence, including additional paving, shall be borne by the

Contractor at no additional cost to the Owner, whether that subsidence is caused by the Contractor's failure to adequately compact backfill or otherwise perform the Work, or is inherent in the construction methods utilized, including tunneling."

Add Article 550.11 which shall read as follows:

"Contractor shall be responsible for all on-site and off-site testing for the Work performed under this Section. Contractor shall retain the services of an independent certified testing laboratory to perform all testing. All testing shall be in accordance with Section 106 of this Specification and the Standard Specifications. Copies of all on-site and off-site test reports shall be submitted to the Engineer. Certified test reports will be acceptable for material proposed to be incorporated into the Work; however, final acceptance will be based on the material as it is actually incorporated into the Work. Testing shall including the following:

Pre-construction and Post-construction Sub-surface Videotaping. Prior to commencing construction and following completion of construction, Contractor shall conduct a closed-circuit internal television inspection of existing mainline combined, storm and sanitary sewers along the routes of the proposed relief sewer, combined sewer, and water mains. The purpose of the televising is to document the condition of the existing sewers prior to the start of the construction and any change in condition, which occurs as a result of construction. Following completion of sewer and water main installation, infiltration/exfiltration testing, backfill compaction testing, and deflection testing, but before final restoration and placing sewers in service, the Contractor shall conduct an internal television inspection of all new mainline sewers 48 inch in diameter or smaller. Inspection of new mainline sewers shall be performed in the presence of the Engineer.

The closed circuit camera and other televising equipment used shall be specifically designed for sewer line inspection. The camera shall be cable drawn. The camera shall be high-resolution color and shall be equipped with a lighted, pivoting head to view branch connections. For sewers 24-inches and larger, the camera shall be mounted on an appropriately sized skid so that the camera is centered in the sewer. Camera pull speed through the mainline pipe shall not exceed 30 feet per minute, the camera should be paused at every connection, and the camera panned to view the full interior of the connection. Crawler-type cameras shall not be used unless the sewer cannot be televised using cable drawn equipment, such as dead-end sewers or sewers so obstructed that pulling cables cannot be installed. If, during the internal inspection, the camera cannot pass through the entire sewer from a single set-up, the sewer internal inspection shall be completed using a reverse set-up from an adjacent manhole. If the sewer cannot be inspected over the remainder of its full length using the reverse set-up, Contractor shall notify the Engineer immediately while the camera remains in the sewer.

Contractor shall record the internal inspection on DVD format. Each DVD made shall be labeled "City of Evanston, 2023 Green Bay Rd Water Main Improvements, PW-WMRS-1801" and shall be consecutively numbered. An index of each videotape shall be provided which includes tape number, street/alley location (including names of end-blocks), beginning manhole number, ending manhole number, length of sewer, diameter of sewer, beginning and ending tape counter numbers. Contractor shall utilize the Owner's manhole numbering system (available through Engineer) to identify the existing sewer sections televised. For post-construction inspection of new sewers, the manhole numbering system shown on the Drawings, prefaced by "City of Evanston, 2023 Green Bay Rd Water Main Improvements, PW-WMRS-1801" or other project designation, shall be utilized. The upstream manhole number, downstream manhole number and footage from beginning manhole shall be superimposed on the video image.

Contractor shall also prepare a written report for each section of sewer televised. Each report shall be labeled "City of Evanston, 2023 Green Bay Rd Water Main Improvements, PW-WMRS-1801"

and shall be coordinated with the DVD. For each sewer section televised, the report shall include: date of inspection, videotape reference number including counter readings, street location (including names of end-blocks), beginning manhole number, ending manhole number, length of sewer, diameter of sewer, and pipe material. The report shall note the locations (as a distance from the beginning manhole) the locations, orientations (o'clock position) and appropriate size parameters of: service and other connections; pipe defects, such as cracks, offsets, sags, deformations and break-in connections; water infiltration; mineral, grit, and grease build-ups; root intrusions; and other irregularities.

Backfill Compaction. During the installation of Case I backfill material, the Contractor shall conduct density testing specified in Article 550.07 in accordance with Section 106. The cost of testing shall be incidental to storm sewer, water main, relief sewer and combined sewer installation and no separate payment shall be made.

Infiltration/Exfiltration Testing. Contractor shall conduct infiltration testing of each manhole-to-manhole section of relief sewer after the pipe is installed and backfilled, but before street paving operations commence. If Contractor elects to compact backfill by jetting (Article 550.07 - Method 3), then the infiltration test shall be performed during the jetting operation. Where the depth of the ground water is less than 24 inches over the crown of the pipe at the upstream section to be tested, an exfiltration test shall be used in place of an infiltration test.

Infiltration tests shall be made by measuring the flow of infiltrating water over a calibrated weir set up in the invert of the sewer. Personnel for reading flow measuring devices will be furnished by the Engineer, but all other labor, equipment, material and water, including gauges and meters, will be furnished by the Contractor.

Exfiltration tests shall be made by bulk-heading the section to be tested and completely filling the subject sewer. The bulkheads shall be watertight and shall be adequately braced to withstand the head of water pressure that will be applied in the testing process. As such, the Contractor shall employ the services of a Registered (Illinois) Structural Engineer for bulkhead and bulkhead bracing design. The exfiltration test shall be conducted by filling the sewer to a level four feet above the crown of the sewer in the manhole at the upper end of the section being tested. The rate of flow required to keep this required level will be the exfiltration. Tests shall be conducted for at least two hours.

No additional pipe shall be laid until the infiltration/exfiltration test on each manhole-to-manhole section of pipe meets specified limits following:

Exfiltration: 100 gallons per day per inch of pipe diameter per mile of sewer.

Infiltration: 100 gallons per day per inch of pipe diameter per mile of sewer.

No visible leaks which endanger the pipe or surrounding bedding/ backfill.

If the specified infiltration/exfiltration limits are exceeded, the Contractor shall televise or internally inspect the sewer in the presence of the Engineer to identify the source(s) of the leakage. Contractor shall immediately make all repairs and/or replacements necessary to achieve the specified infiltration/exfiltration limits. After all repairs are made, the Contractor shall again make an infiltration or exfiltration test. All costs of internal inspection to locate leakage sources, other testing and pipe correction shall be borne by the Contractor at no additional cost to the Owner.

Deflection Testing. For PVC pipes, a deflection test shall also be performed as described in the Standard Specifications for Water and Sewer Construction in Illinois. The maximum permitted deflection shall be 5 percent. Those pipe sections failing deflection testing shall be corrected by re-

excavating the pipe, allowing the pipe to return to its circular cross-section (or replacing the pipe if necessary), and replacing the pipe cover and backfill. Devices that generate internal pressures or vibrations shall not be used to correct pipes failing the deflection test. The cost for deflection testing and pipe correction shall be incidental to the prices bid for Sewer Items. No additional payment will be made for deflection testing or correction of defects located.”

Internal Television Inspection. Following completion of open-cut sewer installation, infiltration/exfiltration testing, backfill compaction testing, and deflection testing, but before final surface is installed, the Contractor shall conduct an internal television inspection of all mainline sewers installed. The television camera used shall be high resolution color, shall be equipped with a revolving head capable of viewing up service connections, and shall be equipped with a footage counter which records on the videotape. For televising pipes 54-inches and smaller, the camera shall be stopped at each lateral connection and the camera head rotated to give a full view of the interior of the lateral. DVD format shall be made of the internal inspections and given to the Owner. The cost of televising the Relief Sewer, Combined Sewer, Storm Sewer, Sanitary Sewer, shall be considered incidental. No additional payments will be made for this work.

Delete Article 550.09 and replace it with the following paragraphs:

“Measurement of sewers shall include all straight sections of pipe and all bends and other fittings, including wyes, tees, reducers and rubber check valves actually installed. The measurement for relief and combined sewers of the materials and sizes specified shall not include the distance through base tee manholes, other manholes, and drop structures. In the case of cast-in-place structures, the distance not included in relief and combined sewer measurement shall be the length from outside of the structure wall on the upstream side of the structure to the outside of the structure wall on the downstream side of the structure as shown on the Drawings. In the case of precast structures, the distance not included in relief and combined sewer measurement shall be the distance between the first joints in standard pipe sections upstream and/or downstream of the structure. Measurement and payment for manholes, base tee sections and other structures shall be made under the appropriate Payment Items for these structures.”

Delete Article 550.10 and replace it with the following paragraphs:

“Installation of storm sewers, relief sewers, and combined sewers shall be paid on a Contract unit price basis per LINEAR FOOT for sewer of the diameter, material, and strength class specified. Payment items are defined below for the various sizes, classes, and materials used, including RCP (reinforced concrete pipe), DIP (ductile iron pipe), and PVC (poly-vinyl chloride) pipe.

The Contract unit prices for RCP, DIP, and PVC sewers shall be payment in full for all materials, labor, and equipment required for: site preparation, including removal, replacement and/or repair of fences and other site objects; trench excavation, including removal and disposal of existing sewer pipes, structures, and excess excavated materials; protection, support and repair of damage to existing utilities; support of trench walls, including shoring and bracing; dewatering of trenches; temporary pumping of flows in existing and new sewers; sewer pipe, including fittings, fittings as necessary to reconnect catch basin outlet leads, risers, adapters, couplings, collars and other components; connection of existing sewers to the proposed sewer; abandonment of existing sewers where called out on the Drawings, including filling and placement of required plugs; bedding placement and compaction to one foot above the top of the pipe; backfill placement, compaction and compaction testing; infiltration/exfiltration testing of sewers; internal television inspection of all pipes; deflection testing of sewers; correction of defects; and, other related work required to complete the installation which is not included under other Payment Items.

The Contract unit price for RCP, DIP, and PVC sewers shall include: combined sewer repairs where shown on the Drawings.

These items shall not include the costs of installations and adjustments of sanitary and water services, which shall be paid for in accordance with the appropriate Payment Items. Adjustment of other existing house service utilities, including gas, electric, cable TV and telephone services, shall be considered incidental to the work and no separate payment shall be made.

Roadway, sidewalk, driveway, and curb/gutter removal/replacement outside the pay limits shown on the Drawings required for completion of the work or for Contractor's purposes shall be incidental to combined sewer, relief sewer, storm sewer, and sanitary sewer construction and no separate payment shall be made.

Pre and Post Construction Sub-Surface Videotaping shall be paid for at the Contract unit price per FOOT of sewer for PRE AND POST CONSTRUCTION SUB-SURFACE VIDEOTAPING of existing combined and storm sewers on streets in which tunnels, relief sewers, and water mains are proposed, at locations as specified, where not covered by other payment items, and at other locations as directed by Engineer. The Contract unit price shall be payment in full for all materials, labor, and equipment required for: traffic control; cleaning of existing sewers (jetting); internal videotaping existing mainline combined sewers and storm sewers, including reverse set-ups, retrieving stuck televising equipment or repairing of sewers damaged by the televising effort; providing one copy of the videotapes (DVD format) and reports to the Owner and other related work required. This item will be measured for payment separately for pre-construction and for post-construction footage.

Sub-surface videotaping will be required before the start of construction and will also be required following completion of the construction (but prior to installation of the bituminous surface course).

The quantity shall not include pre-construction or post-construction videotaping for: sewer liner installation, new relief sewer installation, new storm sewer installation, and new combined sewer installation, all of which shall be considered incidental to the Contract.”

STREET SWEEPING

Add the following paragraphs to Article 107.15:

“The Contractor shall utilize a mechanical street sweeper to clean streets affected by the Contractor's operations, including haul routes, at least twice per week and additionally as directed by the Engineer. Liquidated Damages shall be assessed as outlined in the Bid Form if the Contractor fails to utilize a mechanical street sweeper to the satisfaction of the Engineer. The street-sweeper shall be a full-sized, municipal-type sweeper having dust collection and street washing capabilities. If, in the opinion of the Engineer, dust becomes a problem despite the normal cleanup measures of street sweeping, the Contractor shall wash down the pavement, spread calcium chloride as a palliative, or re-sweep streets as necessary, all at no additional cost to the Owner. The Contractor shall keep sufficient quantities of calcium chloride on site, for use as directed by the Engineer for dust control. The contractor shall provide cleanings twice per week and additionally as directed by the Engineer.

This work will be paid for at the Contract unit price per EACH for STREET SWEEPING, which price shall be payment in full for labor, equipment and materials required to complete the work.

SUPPLEMENTAL WATERING

This work will include watering sod, trees, shrubs, vines, and perennials at the rates specified and as directed by the Engineer.

Schedule: Watering will only begin after the successful completion of all period of establishment requirements. Water trees, shrubs, and vines every 7 days throughout the growing season (April 1 to November 30). Water perennials, plugs, and sod a minimum of twice a week. The Engineer may direct the Contractor to adjust the watering rate and frequency depending upon weather conditions.

Watering must be completed in a timely manner. When the Engineer directs the Contractor to do supplemental watering, the Contractor must begin the watering operation within 24 hours of notice. **The Contractor shall give an approximate time window of when they will begin at the work location to the Engineer. The Engineer shall be present during the watering operation.** A minimum of 10 units of water per day must be applied until the work is complete.

Should the Contractor fail to complete the work on a timely basis or within such extended times as may have been allowed by the Department, the Contractor shall be liable to the Department liquidated damages as outlined in the **“Failure to Complete Plant Care and Establishment Work on Time” special provision.**

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

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

Source of Water: The Contractor shall notify the Engineer of the source of water used and provide written certification that the water does not contain chemicals harmful to plant growth.

Rate of Application: The normal rates of application for watering are as follows. The Engineer will adjust these rates as needed depending upon weather conditions.

- 35 gallons per tree
- 25 gallons per large shrub
- 15 gallons per small shrub
- 4 gallons per vine
- 3 gallons per perennial plant (Gallon)
- 2 gallons per perennial plant (Quart)
- 2 gallons per perennial plant (Plug)
- 27 gallons per square yard for Sodded Areas

Method of Application: A spray nozzle that does not damage small plants must be used when watering all vegetation. Water shall be applied at the base of the plant to keep as much water as possible off plant leaves. An open hose may be used to water trees, shrubs, and seedlings if mulch and soil are not displaced by watering. The water shall be applied to individual plants in such a manner that the plant hole shall be saturated without allowing the water to overflow beyond the earthen saucer. Watering of plants in beds shall be applied in such a manner that all plant holes are uniformly saturated without allowing the water flow beyond the periphery of the bed. Water shall slowly infiltrate into soil and completely soak the root zone. The Contractor must supply metering equipment as needed to assure the specified application rate of water.

Method of Measurement: Supplemental watering will be measured in units of 1000 gallons of water applied as directed.

Basis of Payment: This work will be paid for at the contract unit price per unit of SUPPLEMENTAL WATERING, measured as specified. Payment will include the cost of all water, equipment and labor needed to complete the work specified herein and to the satisfaction of the Engineer.

TEMPORARY LIGHTING SYSTEM

Description.

This item of work shall consist of the equipment, material and labor to install a temporary lighting system as described in the plans and per IDOT standard. The temporary lighting system shall consist of 30' wood poles and aerial wiring. Power for the temporary lighting shall be provided by the existing lighting system.

Basis of Payment

This work shall be paid for at the Contract unit price lump sum for TEMPORARY LIGHTING SYSTEM.

TEMPORARY SIDEWALK

Description. This item shall consist of construction, maintenance and removal of temporary sidewalk as required for pedestrian access during construction. This work shall be performed in accordance with the applicable Articles of Section 406 of the Standard Specifications for hot-mix asphalt and as described herein.

Installation. Temporary sidewalk shall be constructed of a 2 in. thick hot-mix asphalt surface. The subgrade shall be compacted to the satisfaction of the Engineer prior to temporary sidewalk placement. The continuous clear width of temporary sidewalk shall be the greater of the existing sidewalk width or 4 ft. Removed sidewalk shall be performed in accordance with the applicable Articles of Section 440 of the Standard Specifications. Disposal of the temporary sidewalk will be performed in accordance with Article 202.03 of the Standard Specifications.

Method Of Payment. This work shall be measured for payment in units of square foot of temporary sidewalk.

Basis Of Payment. This work shall be paid for at the contract unit price per square foot for TEMPORARY SIDEWALK, which shall include all equipment, material and labor required for the construction, maintenance and removal and disposal of temporary sidewalks and preparation and compaction of the subgrade. Locations of temporary sidewalk placement shall be determined by the Engineer as field conditions warrant.

TRASH RECEPTACLE

Description.

This work shall consist of furnishing and installing per manufacturers recommendation the following:

1. Manufacturer: Global Industrial, www.globalindustrial.com; Model: #T97237726BK or
2. Manufacturer: Victor Stanley, Inc., www.victorstanley.com; Model: #RB-36 or
3. Manufacturer: Wausau Tile, www.wausautile.com; Model: #MF3212

Support Frames: Steel; welded.

Trash Receptacles:

1. Capacity 36-gallon
2. Dimensions: 36"H x 28"Dia
3. Design: Fully welded durable receptacle has steel body that is reinforced with circular bands and rolled edges. Endures extreme climate conditions. Flat bar steel and polyester powder coat finish deters graffiti and vandalism. Includes anchor kit and black plastic liner.
4. Installation Method: surface mount.

Material Finish: Powder coated black

Options: Anchor kit and black rigid plastic liner

METHOD OF MEASUREMENT: Furnishing and installing trash receptacles and all associated equipment and materials will be measured in place for each receptable.

BASIS OF PAYMENT: Furnishing and installing trash receptacles will be paid for at the contract unit price per EACH for TRASH RECEPTACLES.

TRENCH BACKFILL

Add the following paragraphs to Article 208.02:

Water Main

Bedding (4" below bottom of pipe to spring line) – Coarse Aggregate

Trench backfill (spring line to bottom of pavement) – Fine Aggregate

Fine aggregate shall consist of sand (natural) gradation FA 6. Stone sand, chats, wet bottom boiler slag, slag sand, granulated slag sand, or crushed concrete sand will NOT be allowed.

Coarse aggregate shall be crushed gravel or crushed stone gradation CA-7, CA-11 or CA-13. Gravel, crushed concrete, crushed slag, chats, crushed sandstone, or wet bottom boiler slag will NOT be allowed.

Case I - Trench Backfill in Paved Areas. Case I applies to excavation in any area which has or which is proposed to have a permanent type street, sidewalk, curb and gutter, bituminous paved parking lot, or is within 2 feet of a paved surface. Trench backfilling shall be performed in accordance with Article 550.07 modified herein. Where backfilling a trench containing a single longitudinal pipe, the Contractor shall use fine aggregate gradation FA-6 sand (natural). Where backfilling a trench containing multiple longitudinal pipes (common trench), the Contractor shall use coarse aggregate gradation CA-7, CA-11, or CA-13 crushed gravel or crushed stone from 4-inches below the bottom of the lowest pipe to 12-inches above the crown of the highest pipe and fine aggregate gradation FA-6 sand (natural) from 12-inches above the crown of the highest pipe to the pavement sub-grade. Granular trench backfill shall be compacted to a minimum of 95% Standard Proctor Density as per ASTM-D698. Where native subsoils excavated from trenches meet the gradation, quality, and other requirements of Article 1003.04, this material shall be used to backfill trenches in lieu of new FA-6 material.

Use of native soil for backfill shall be incidental to the cost of the sewer or water main installation and no separate payment shall be made. Use of native soils for backfill that has been transported between different locations on this project shall be incidental to the cost of the sewer or water main installation unless otherwise approved in advance by the Engineer.

Trenches shall be backfilled with FA-6 sand (natural) granular material or native subsoils meeting FA-6/quality requirements up to the proposed bottom of the pavement structure within the standard trench width. The remainder of the trench shall be backfilled as soon as possible with full-depth temporary aggregate. The temporary aggregate shall be coarse aggregate and shall consist of gravel, crushed gravel, crushed stone, or crushed concrete. Crushed slag and grindings from PCC or HMA surface removal operations will NOT be allowed.

When specified by the Engineer, the top of the trench shall also receive temporary asphalt surfacing consisting of 3-inches of compacted hot-mix asphalt with a steel drum roller over the temporary aggregate. The temporary aggregate shall be re-graded and compacted as necessary to permit the surface of the temporary asphalt to be flush with existing hard-surface pavements. Temporary asphalt shall be placed and compacted with a steel drum roller as soon as practical after backfilling the trench and placing the aggregate surface course.

The Contractor shall maintain temporary aggregate and temporary asphalt surfaces free from, ruts, potholes or other displacements and provide means for dust control until such time as the permanent pavement is placed. Should settlement occur, the Contractor shall furnish and install additional temporary paving material to maintain the surface at street grade. Maintenance of temporary paving shall be incidental to the initial paving operation and no separate payment shall be made.

Delete Article 208.04 and replace it with the following:

Trench backfill fine aggregate material will be paid for at the contract unit price per CUBIC YARD for TRENCH BACKFILL furnished and placed between the top of bedding (at spring line) and the bottom of the pavement structure within the standard trench widths as shown on the plans. The contract unit price for TRENCH BACKFILL shall be payment in full for all materials, labor, equipment, transportation and related work required to furnish Case I FA-6 sand (natural). No payment will be made for the hauling, compaction, placement, and testing of accepted native soils used as trench backfill.

TRENCH BACKFILL required for filling outside the standard trench widths shown on the plans shall be incidental to water main construction contract items and no separate payment shall be made.

Trench backfill coarse aggregate material will be paid for at the contract unit price per CU YD for POROUS GRANULAR BACKFILL furnished and placed between the trench subgrade and the pipe spring line for rigid pipe and to 12" above the top of pipe for flexible pipe.

FLUOROCARBON RUBBER (VITON) GASKET

Description: The work of Pay Item shall be in accordance with Section 561 and shall consist of substituting common gaskets used in water main pipe joints, with buna-nitrile material gaskets.

Basis of Payment: The work shall be paid for at the Contract Unit Price for each FLUOROCARBON RUBBER (VITON) GASKET.

**CATCH BASINS, TYPE C, 2' DIAMETER, TYPE 1 FRAME AND GRATE
CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID (SPECIAL)
INLETS, TYPE A, 36" DEPTH, TYPE 1 FRAME, OPEN LID**

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 Contractor will be responsible for ensuring that the pipe openings are formed in the correct locations so that additional cutting of the precast structure is not necessary. A minimum of 2" and maximum of 6" of adjustment rings will be allowed.

The removal of structures where a new structure is to be installed in the same location will not be paid for separately but shall be included in the cost of the new structure. All trench backfill used to fill around the new structure will also be considered included in this item.

Storm sewers impacted or damaged during structure replacement will not be measured for payment separately and shall be considered included in the cost for the catch basin pay item.

Basis of Payment: This work will be paid for at the contract unit price per each for CATCH BASIN or INLET of the type, size, and type of frame and grate or frame and lid specified.

DUCTILE IRON WATER MAIN

Add the following to Article 561.01:

"Where shown on the Drawings, Line Stopping shall be performed. This work shall involve the placement of a self-contained hydraulic unit within an operating water main for the purpose of installation of a valve and/or other connection with the existing system without interruption of service."

Add the following to Article 561.02:

- (a) All materials shall be Made in America
- (b) Line Stops. The line-stop unit shall be a self-contained hydraulic (hand pump operated) ram. The line-stopping device shall be of such a design that, when hydraulic pressure is applied, the bladder will expand and conform to the I.D. of the pipe and tuberculation inside the main (if any) will be moved outside of the sealing area.

The line-stop shall be of the 'Short Stop' variety, which will require removing only the top of the pipe during the operation. All fittings shall employ an I.D. thread, screw-type engagement together with O-Ring seal for bubble-tight completion. After insertion of plug, a screw-on cap will be used and bolted down. The system shall be capable of containing a water pressure of 150 psi. The line-stopping system shall be Hydro-Stop. Line-stop sleeves shall be Style "Evanston Sleeve Total Seal" Extra Heavy Duty as manufactured by Hydro Stop.

- (c) Fasteners. Stainless steel bolts will be used on all fittings or mechanical joints.
- (d) Fittings. All fittings furnished shall be ductile iron conforming to AWWA Standard for Ductile Iron Compact Fittings C153, 350 psi rating. Fittings shall be mechanical joint and shall be equipped with Mega-Lug joint restraining glands. Restraining glands which rely on the bearing of screw-points on the water main wall shall not be utilized. All fittings shall be cement-mortar lined inside and bituminous-coated outside, in accordance with Sec. 51-8 - ANSI A21.51 (AWWA C104 and C151).
- (e) Valves. Gate valves and tapping valves with sleeve and cut in-valves 24-inches and smaller in size shall be resilient wedge mechanical joint type, manufactured to meet or exceed the requirements of AWWA C515, latest revision. Gate valves larger than 24-inches in size shall be of double disc type to meet AWWA C500 requirements and shall be in accordance with the following specifications:
- i. Valves shall be Waterous Series 2500 and shall have the manufacturer and year cast on the body with raised letters.
 - ii. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve. The sealing mechanism shall consist of a cast iron gate having a vulcanized synthetic rubber coating. The resilient sealing mechanism shall provide zero leakage at the design water pressure of 150 psi when installed with the line flow in either direction. All valves are to be tested in strict accordance with AWWA C515 or AWWA C500.
 - iii. Valves shall have non-rising stems made of cast, forged, or rolled bronze shown in AWWA C515. Two stem seals shall be provided and shall be of the O-ring type.

- iv. Valves shall be equipped with cast iron operating nuts and shall be secured to the stem with stainless steel bolts. Valves shall turn counterclockwise, or left (looking downward at the operating nut) to open.
 - v. The valve body, bonnet and cover shall be cast iron ASTM A126, Class B. All internal and external surfaces shall be coated with epoxy to a minimum thickness of 4 mils. Bonnet bolts shall be stainless steel.
- (f) Fire hydrant with auxiliary valve and valve box. Hydrants shall conform in all respects to the American Water Works Association Standard C502 latest revision and shall meet the following specifications:
- i. Hydrants shall be Waterous Pacer. The hydrant shall have a breakaway flange at the ground line and shall be for five and one-half (5-½) or six (6) feet of cover as appropriate. Hydrant size shall be 5-¼ inch valve opening with a 6-inch mechanical joint inlet connection. Stem seals shall be "O-Ring" type. Hydrants shall be equipped with drain outlets. Finish color above the ground line shall be red. Note red color shall extend at least 6-inches below the intended ground line. Hydrant shall be installed such that the breakaway flange is installed within two (2) inches of the finished grade. The breakaway flange must not be buried. All buried bolts shall be stainless steel. Hydrant extension is allowed to adjust to minimum grade requirements.
 - ii. Hydrants furnished shall be for buried installation with two 2 ½ inch hose connections and one 4-inch pumper nozzle, National Standard Threads. Operating and outlet nozzle cap nuts shall be of pentagon shape in conformance with Section 3.2.9.8 of AWWA Standard. Suitable nozzle caps, gaskets, and chains shall be provided.
 - iii. All auxiliary valves used for hydrant installation shall be in conformance with the specifications of AWWA C515. Valve boxes used for auxiliary hydrant valves shall be 5-¼-inch shaft diameter with cover marked "WATER". All boxes shall be F-2450 as manufactured by CLOW CORP, Tyler 6850-664S. The auxiliary valve shall be installed 2 feet from the fire hydrant or as specified by the Engineer.
 - iv. Where existing fire hydrants are being replaced, the replacement shall include removal of all existing hydrant components, including: the existing connection to the water main, the water main to the hydrant, hydrant valve, valve box and hydrant. Care shall be exercised in the removal of the existing hydrant and valve such that they are not damaged. The existing valve and hydrant shall be stored by the Contractor to the end of the Project or other time during the Project designated by the Owner, at which time it shall be delivered to the Owner.

Installation of New or Replacement Fire Hydrant shall include all new components, including: tee fitting equipped with Mega-Lug joint restraining glands at the water main, extensions or reduction in height, 6-inch DIP hydrant water supply main from the tee, auxiliary hydrant valve, valve box and hydrant. Replacement components shall conform to all applicable specifications presented in Section 561. In order to achieve the required hydrant height from the ground surface shown on the drawings for replacement hydrants, an adjustable pipe offset shall be used, if necessary.

- v. All new fire hydrants installed mid-block shall be installed on the property line between two

adjacent properties. New fire hydrants shall be covered with a burlap bag until they are placed in service. Existing fire hydrants which are taken out of service with the existing water main shall be covered with a burlap bag until they are removed.”

- vi. Use of same class pipe material with main line is required on each proposed hydrant location. (If water main line is class 52, use class 52 for hydrant run).
- (a) Ductile Iron Pipe Water Main. All ductile iron pipe shall be thickness class 52 in accordance with AWWA Standard Specifications for Ductile Iron Pipe, External Zinc-Based Coated, centrifugally cast in Metal Molds for water or other Liquids - AWWA -C151 latest revision. Coating: The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m² of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. The coating system shall conform in every respect to ISO 8179-1 "Ductile iron pipes - External zinc-based coating - Part 1: Metallic zinc with finishing layer. Second edition 2004-06-01." The whole of the above Specifications shall apply. The pipe shall be furnished with push-on joints. All pipe shall be cement-mortar lined inside and bituminous-coated outside, in accordance with Sec. 51-8 - ANSI A21.51 (AWWA C104 and C151). All ductile iron pipe must be clearly marked by the manufacturer to indicate pipe classification or pipe thickness. Unmarked pipe will not be accepted. Viton gaskets will be required at the Dewey Avenue project location as determined by additional environmental testing conducted by the contractor prior to the start of construction as approved by the Engineer.
 - (b) Tapping Sleeves and Valves. For water main extensions and water services greater than 2-inch, tapping sleeves are required which shall be CST-EX "Total Seal" Extra Heavy Duty all stainless steel tapping sleeve with drop-in stainless steel bolts and nuts as manufactured by Cascade Waterworks Manufacturing. Tapping valves shall be as specified under Article 561.02 Subparagraph (c.) and shall be secured using stainless steel T-bolts and nuts. Tapping sleeves shall be located a minimum of two feet clear distance from any existing joint or fitting.
 - (c) Foster Adaptor. The device shall be Infact Corporation FOSTER ADAPTOR, included in the cost of various pay items. Mechanical joint (MJ) valves and fittings shall be connected using a bolt-through positive restraint mechanism manufactured of U. S. A. ductile iron conforming to ASTM A536, 65-45-12. The positive restraint device shall connect the valves and/or fittings at a linear distance not to exceed three (3) inches and without attachment to pipe. The device shall come complete with all accessories, including standard styrene butadiene rubber (SBR) MJ gaskets conforming to the latest revision of AWWA C111/ASTM F-477 and weathering steel (Corten) bolts conforming to AWWA C111/A21.11 and ASTM A242. Nuts for 3 through 12-inch sizes shall be SAE Grade 5 steel with black oxide coating. Nuts for 14-inch and larger adaptors shall be heavy hex Corten steel conforming to ASTM A242. Sizes 3-12-inch of the bolt-through MJ positive restraining device shall be supplied with an NSF 61 asphaltic seal coating in accordance with ANSI/AWWA C104/A21.4. Sizes 14-36-inch shall be supplied with NSF 61, 7-mil. fusion bonded epoxy conforming to AWWA C116/ A21.16-09 as well as the coating, surface preparation and application requirements of ANSI/AWWA C550. For sewer installations, the device shall be supplied with 40-mil Protecto 401 epoxy. [Epoxy coating, blue Teflon® coated, and stainless steel hardware are available for all sizes.] The device shall be used with standard mechanical joint fittings (AWWA C110 or C153) and valves.

Shop drawings for water system components shall be submitted for approval as soon as possible, but not less than thirty (30) calendar days prior to the time when the components are intended to be installed."

Add the following additional sentences to Subparagraph (a) of Article 561.03:

"The trench shall have a flat bottom conforming to the grade to which the pipe is to be laid, and provided with a minimum of 5-feet, 6-inches of cover. Provide pipe insulation if cover is less than 5-feet (Incidental to various pay Items). Along the proposed pipe alignments indicated on the plans, the Contractor shall remove the surface materials only to such widths as will permit a trench to be excavated, which will afford sufficient room for efficient and proper construction. Where sidewalks, driveways, pavements, and curb/gutter are encountered, care shall be taken to protect such against fracture or disturbance beyond these working limits.

Prior to the placement of all pipes, bedding shall be placed on the trench bottom, compacted and shaped to receive the pipe. The pipe shall be placed as shown in the plans. Any part of the trench excavated below the grade shall be corrected with approved material, firmly compacted. Where the Contractor must excavate below the plan grade indicated because of unforeseen conditions, all additional excavation and backfilling will be considered incidental to the Contract. In some instances, trees, shrubs, utilities, sidewalks and other obstructions may be encountered, the proximity of which may be a hindrance to open-cut excavation for installation of water mains and appurtenances. In such cases, the Contractor shall excavate by means of auger in order to protect such obstructions against damage. Augering work shall be performed in accordance with the clearances and procedures specified in Article 550.04."

The trench shall be excavated to the alignment and depth required and may be advanced up to 50 feet ahead of the pipe laying operation during working periods and up to 10 feet ahead of pipe laying operations during non-work periods. Trenching operations shall be terminated at the end of each day's work in locations that do not obstruct roadways, alleys or driveways. In general, the length of open trench shall not exceed 70 feet from the forward cut to the completely backfilled trench nor shall more than one street crossing be obstructed by the same trench at any one time. Open cut excavations shall be reduced to a maximum length of 30 feet for overnight protection.

Open-cut trenches shall be supported as required to fully protect life, existing utilities, adjacent structures, pavements, and the Work. Trench support is an integral part of the Contractor's means and methods. The Contractor shall employ the services of a registered (Illinois) Structural Engineer, registered (Illinois) Professional Engineer, Geotechnical Engineer, and other professionals as necessary to prepare designs of support systems. The support systems shall conform to Federal laws, State laws and municipal ordinances. The minimum protection shall conform to the recommendations in O.S.H.A. Safety and Health Standards for Construction. A sand box or trench shield may be used as permitted by O.S.H.A.

Add the following subparagraphs to Article 561.03:

(c) Notification. Wherever construction activities will disrupt water mains and/or individual water services, the Contractor shall develop a work plan for limiting the extent and duration of the disruption. This work plan shall be submitted to the City of Evanston Utilities Department for review and approval not less than two weeks before the planned disruption. No disruption will be permitted until said work plan has been reviewed and approved.

In addition, it is the responsibility of the Contractor to directly notify the City of Evanston Utilities Department, affected customers, and, if fire hydrants are affected, the City of Evanston Fire

Department not less than 48-hours in advance of the start of the disruption, advising them of the planned time and duration of the disruption. Each disruption to the mainline system; an individual service; or, group of services, when they are being transferred to a new water main in a single, staged construction operation, shall be considered a separate occurrence, for which notification shall be provided. The Contractor shall also directly notify the City of Evanston Utilities Division not less than 48-hours in advance of mainline pressure-testing and disinfection operations. In cases where construction activities will require operation of water main valves, the City of Evanston Utilities Department will be responsible for the operation of the valves.

(d) Installation. All pipe laying and the making of all joints shall be done strictly in accordance with manufacturer's directions and in accordance with AWWA C600 "Installation of Ductile Iron Water Mains and Their Appurtenances". Mechanical joint fittings shall be spaced a minimum of 2 feet apart. The Contractor shall be responsible for achieving the water-tightness specified. The method of handling and of placing pipe in the trench shall not damage the pipe. Pipe interiors shall be kept clean and the exposed ends of the pipe in the trench shall be closed by suitable watertight bulkheads at all times when pipe-laying is not actually in progress. Abrupt changes in pipe alignment shall be accomplished by use of appropriate fittings as shown on the Drawings. Wherever long horizontal or vertical curves are shown on the drawings, the pipe may be laid to such curves by uniformly deflecting the pipe joints along the arc of the curve to form a smooth radius. Pipe deflection shall not exceed one-half the maximum allowable joint deflection recommended by the pipe manufacturer. A temporary plug/cap or watertight protection is required for the end of pipe at the end of any working days and is considered incidental.

All required valve box extensions shall be made so that the top section is a minimum 2 feet in length. Blocking at bends, tees, caps, hydrants and valves shall be of poured Class SI concrete, a minimum of 12" thick, placed between solid ground and the fitting, and shall be anchored in such a manner that pipe and fitting joints will be accessible for repairs.

New and relocated fire hydrants shall be placed a minimum of three feet from the back of the curb unless otherwise directed by the Engineer. All fire hydrants on new mains shall be covered with burlap bags until such time that the Owner notifies the Contractor that the burlap bags shall be removed."

Add Article 561.06, which shall read as follows:

Hydrostatic Tests. Hydrostatic tests will be performed according to Section 13 of the American Water Works Association Specifications, Designation: AWWA C600. The water main will be subjected to the hydrostatic pressure and leakage tests specified in the Special Provisions. Water for making the hydrostatic and leakage tests shall be furnished by the Contractor at his/her own expense and shall be of satisfactory bacteriological quality for drinking purposes.

"Only one connection of the new pipeline, as approved by the Owner, shall be made to the present system prior to pressure-testing the new pipeline. Contractor shall provide all temporary bulkheads/plugs required for testing. Contractor shall test the pipeline in sections as approved by Engineer. The test shall be made by closing valves and filling the lines slowly with water. Care shall be used to see that all air is released during the filling of the pipeline. After the line or section thereof, has been completely filled, it shall be allowed to stand under a slight pressure for sufficient time to allow the escape of air from any air pockets. During this period the hydrants, valves, and other connections shall be examined for leaks. If any are found, they shall be stopped prior to the pressure test.

PRESSURE / LEAK TEST

Only one connection to the new water main, as approved by the Engineer and the City of Evanston Water and Sewer Division, shall be made to the present system prior to pressure testing the new water main. The Contractor shall provide all temporary bulkheads / plugs required for testing.

The Contractor shall test the water main in sections as approved by the Engineer and the City of Evanston Water and Sewer Division. The test shall be made by closing valves and filling the lines slowly with water, care shall be used to see that all air is released during the filling of the water main. After the line or section has been completely filled, it shall be allowed to stand under slight pressure for sufficient time to allow the escape of air from any air pockets. During this period, the hydrants, valves and other connections shall be examined for leaks. If any are found, they shall be repaired prior to the start of the pressure / leak test.

The test shall consist of holding a pressure on the water main of 150 pounds per square inch (psi) for a period of at least two (2) hours. The pressure during the two hour test cannot vary by more than 5 psi for the duration of the test.

Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe or any valve section thereof to maintain pressure within 5 psi of the specified test pressure after the water main has been filled with water and the air has been expelled. This leakage will be calculated after the 2-hour test has been completed. The water necessary to bring the pressure up to 150 psi from a measured container shall be the amount of leakage. Leakage will equal the amount of water used from the container.

No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$L = (S \times D \times \text{SQRT } P) / 133,200$ in inch-pound units:

Where:

L = allowable leakage, in gallons per hour

S = length of pipe tested, in feet

D = nominal diameter of the pipe, in inches

P = average test pressure during the leakage test, in psi (gauge)

Where it is not practical to pressure test the final connections to an existing water main, a visual inspection shall be carried out under normal working pressure before backfilling the trench. Any noticeable leakage shall be stopped and any defective pipe shall be replaced with new sections.

Add Article 561.07, which shall read as follows:

Disinfection of Water Main. Upon completion of the newly laid water main, the water main shall be disinfected according to the American Water Works Association, Procedure Designation: AWWA C651, except as modified herein. Bacteriological Tests shall follow AWWA C651 Option A, modified for sampling at 24 hour intervals as noted below.

Disinfection of Water Main

The basic disinfection procedure consists of:

- 1) Preventing contaminated materials from entering the water main during storage, construction or repair.

- 2) Removing, by flushing **at a velocity of 3.0 ft. /sec** those materials that may have entered the water main.
- 3) Chlorinating any residual contamination that may remain, and flushing the chlorinated water from the main.
- 4) Protecting the existing distribution system from backflow due to hydrostatic pressure test and disinfection procedures.
- 5) Determining the bacteriological quality by laboratory test after disinfection.
- 6) Final connection of the approved new water main to the active distribution system.

The Contractor shall provide all corporation cocks necessary for disinfection of the new water main. These corporation cocks shall be placed as necessary to facilitate testing and disinfection of the new water main, including chlorine application points and sample collecting points. These corporation cocks shall be located in valve vaults only, unless otherwise approved by the Engineer.

The new pipe shall be thoroughly flushed clean, at a velocity of 3.0 ft. /sec and pressure tested before disinfection is attempted. All disinfecting work shall be done by the Contractor with the approval of the Engineer. Heavy particulates generally contain bacteria and prevent even very high chlorine concentrations from contacting and killing such organisms. It is therefore essential that the water main be thoroughly flushed before the final disinfection by chlorination is performed.

The method to be used for disinfecting the water main is referred to as the **Continuous-Feed Method using Chlorine Gas**. At a point not more than 10 feet downstream from the beginning of the new water main, water entering the new main shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 50 milligrams per liter (mg/l) free chlorine at the discharge end. The chlorine solution must be distributed uniformly throughout the length of the water main being disinfected.

After the contact period of not less than 24 hours, the water main shall be flushed until chlorine concentration of the water leaving the new water main is no higher than that generally prevailing in the distribution system (under one milligram per liter (mg/l)).

If there is any possibility that the chlorinated water will cause damage to the environment, then a neutralizing chemical shall be applied to the water to be wasted to neutralize thoroughly the chlorine residual remaining in the water. This neutralizing chemical must be approved for that purpose.

After final flushing and before the new water main is connected to the City's water distribution system, two consecutive sets of acceptable samples (no bacteria growth), taken at least 24 hours apart, shall be collected from the new water main. The second days' sample will be collected using only the water main pressure, no water main valves will be open for this sample and no flushing will be permitted. At least one set of samples shall be collected from every 1,200 feet of the new water main, plus one set from the end of the line, and at least one set from each branch or as required by the Owner.

Sampling for bacteriological analysis shall be collected in sterile bottles treated with sodium thiosulfate as required by Standard Methods for the Examination of Water and Wastewater. No hose or fire hydrant shall be used to collect samples. Corporation cocks may be installed in the water main with a copper tube gooseneck assembly to obtain samples. After samples have been collected, the gooseneck assemblies must be removed.

The City of Evanston will take the samples and perform the lab testing. For acceptance, two consecutive sets of samples, taken at 24 hour intervals, shall indicate bacteriologically satisfactory water.

If the initial disinfection fails to produce satisfactory bacteriological results, the new water main may be refushed and shall be resampled. For each time the City must resample, the Contractor shall be assessed fees to cover City costs as outlined below. If these samples also fail to produce acceptable results, the water main shall be rechlorinated by the continuous feed method until satisfactory results are obtained.

Failure to follow this procedure during pressure and chlorination testing may result in unacceptable results and may require the Contractor to incur additional costs in re-testing and cause project completion delays.

The interior of all mainline pipe, service pipe, fittings, valves, corporation stops, curb stops, and other water main or water service components which are likely to come in contact with potable water immediately after their installation or before chlorine-gas disinfection can be accomplished, shall be swabbed, soaked, or sprayed with a 2 percent hypochlorite solution before they are installed.

The Contractor shall provide all corporation cocks necessary for disinfecting the new pipeline. These corporation cocks shall be placed as necessary to facilitate testing and disinfection of the new water main, including chlorine application points and sample collecting points. These corporation cocks shall be located in valve vaults. The new pipeline shall be flushed clean before disinfection is attempted. All disinfecting work shall be done by the Contractor under the direction and with the cooperation of the Owner."

Contractors will be charged for each of the following additional tests when necessary because of Contractor's failure to pass the initial test:

Each Additional Pressure Test	\$167.00
Each Additional Chlorination	\$167.00
Each Additional Flushing and Sample Collection	\$167.00
Each Additional Sample Analysis (laboratory fee)	\$25.00

Add Article 561.08, which shall read as follows:

"561.08 Sequence of Work. Contractor shall submit a work plan indicating the sequence of water main installation not less than ten (10) calendar days prior to the planned start of work. This work plan shall include information as to where and how the flushing, pressure testing, and disinfection of the new pipeline will be carried out in such manner that will cause the least amount of water service interruption to the water customers. The work plan must be approved by the Owner prior to installation of any water mains and shall conform to the following general sequences of installation listed. The City requires fourteen (14) days notice prior to any shutdowns.

Items of Work shall be completed in the following sequence unless otherwise approved in writing by the Engineer:

- 1) Placement of Temporary Traffic Control and Protection
- 2) Posting of No Parking Sign
- 3) Tree Protection Measures (Tree Canopy Pruning, Tree Root Pruning, Temporary Fencing)

- 4) Exploration Trenches as needed
- 5) Water Main Installation and Patching of Trench with temporary Hot-Mix Asphalt (To be completed as the end of each day)
- 6) Water Main Testing
- 7) Water Service Installation and Transfers, Final Interconnection, and Sewer Work
- 8) Permanent Trench Pavement Patching and Concrete Curb and Sidewalk Repairs
- 9) Initial Parkway Restoration (Final Grading of Topsoil) – Partial Completion Met
- 10) Paving Operations (Utility Frames Removals as directed by Engineer, HMA Surface Removal, Additional Pavement Patching as directed by Engineer, Binder Paving, Utility Frame Adjustments, HMA Surface Paving)
- 11) Pavement Marking - Substantial Completion Met
- 12) Final Parkway Restoration (Installation of Sodding)
- 13) Punch List Work

GENERAL REQUIREMENTS

All water main construction for all streets and sections shall conform to the following two general requirements (as well as the detailed sequencing for each street).

Water Services

Residents and businesses affected by the installation of new water services must be notified **24 hours in advance and 15 minutes prior to the shutoff.**

Prior to backfill of the new water service the Contractor shall take Global Positioning System (GPS) coordinates at the point of connection to the new water main, new curb box, and the location the water service enters the home. The coordinates shall be submitted to the Engineer for each property.

The Contractor must flush the new water service and make every effort to assure debris does not enter the existing portion of the water service as the new installation takes place. All water services shall be perpendicular to the new water main to the new round way and B Box. Provide pipe insulation if cover is less than 5-feet (Incidental to various pay Items).

Following completion of the water service replacement, the Contractor shall submit a Post-Construction Layout Drawing making any adjustments to the Pre-Construction Layout Drawing as necessary to identify the installed location of the water service and to show full or partial replacements.

Final Interconnections

After all of the water services have been installed and are in service the Contractor will make the connection(s) to the existing water main(s) as indicated in the plans.

The Contractor shall notify the Utilities Department 48 hours in advance of initiating these connections to allow the Utilities Department sufficient time to notify residents of the water service interruption and schedule the necessary valve closures. Only Utilities Department personnel may operate existing valves in the distribution system.

The Contractor must be prepared to make these connections in a timely fashion. A maximum of four (4) hours will be allowed per shutdown to complete the connections to existing water mains. Because these connections cannot be pressure tested or chlorinated, the Contractor must swab all pipe and fittings with a 2% hypochlorite solution using a new, clean long-string mop and the new section of main must be pressurized prior to backfilling. The Contractor shall also swab and

chlorinate water main sections as outlined above that branch off the "main line" water main that may be difficult to properly flush. Prior to back filling the Contractor must install the appropriate sized MJ end cap on the open end of all of the abandoned water main. Concrete blocks shall be installed beneath all of the connection points between the old and new water mains.

THE CONTRACTOR SHALL SUBMIT, FOR REVIEW BY THE CITY, A DETAILED CONSTRUCTION SCHEDULE AT THE PRE-CONSTRUCTION MEETING IN ACCORDANCE WITH THE FOLLOWING GUIDELINES.

"NO PARKING" SIGNS REQUIRED BY THE CITY INDICATE CONSTRUCTION ZONE NO PARKING MONDAY THROUGH FRIDAY BETWEEN THE HOURS OF 7:00AM TO 4:00PM. Payment shall be made at the Contract unit price per LINEAR FOOT for each of the various sizes of DUCTILE IRON WATERMAIN, actually installed as specified, measured in place. These Contract unit prices shall be payment in full for all materials, labor, and equipment required for: site preparation, including removal, replacement and/or repair of fences and other site objects; trench excavation, including removal and disposal of existing pipes, structures, and excess excavated materials; protection, support and repair of damage to existing utilities; support of trench walls; shoring and bracing; dewatering of trenches; pipe; bends; fittings; restraining glands; installation and removal of temporary fire hydrants, which will be provided by the City; thrust blocks; plugging existing water mains; support of pipe at water main connections; joint materials; hydrostatic testing; disinfection; corporation stops used for disinfection; bedding; backfill placement, compaction and compaction testing; testing; correction of defects; and, other work required to complete the installation which is not included under other Payment Items.

Payment shall also be made at the Contract unit price per EACH for WATER VALVES, of the size specified; for PIPES, EXTENSION, FIRE HYDRANT WITH AUXILLARY VALVE AND VALVE BOX AND FH PIPE RUN AND EXTENSIONS OR REDUCTION OF HEIGHT, of the size specified; for VALVE BOXES, of the size specified; for PRESSURE CONNECTION; for TAPPING SLEEVE, of the size specified; and for WATER MAIN LINE STOP, of the size specified.

The City will furnish temporary fire hydrants which are to be installed by the Contractor at the locations designated on the plans for the purpose of flushing the newly installed water main clean at a velocity of 3.0 ft. /sec. Prior to the final water main interconnections, the Contractor shall remove the temporary fire hydrant, store it in a safe location, and contact the City for pick up. This work shall be incidental to the water main construction, and no separate payment shall be made.

These items shall not include the cost of pavement, sidewalk, driveway, and curb/gutter removal and disposal within the pay limits show on the Drawings. Roadway, sidewalk, driveway, and curb/gutter removal/ replacement within pay limits or as directed by the Engineer shall be paid for in accordance with the appropriate Payment Items.

DUCTILE IRON WATER MAIN FITTINGS

Unless listed under other Contract items, all bends, crosses, tees, sleeves of all types, reducers, plugs or caps, and other fittings required to assemble and secure the proposed water mains along the route shown on the Plans shall be included under this item. All fittings shall be ductile iron type and be manufactured in the USA. The manufacturer shall furnish a certificate acknowledging the same to the Engineer.

The costs for furnishing and installing the standard joint accessories (gland, gasket, and bolts) for these fittings shall be included in the Contract unit price for this item and shall not be paid for separately. The payment under this item shall be based upon the casting and accessories' weight for cast iron fittings.

The Contractor shall maintain a list of fittings installed and shall provide an invoiced listing of the body casting and accessories weights of these fittings to be used for determining the payment for this item. All concrete blocking to be furnished and installed shall be considered incidental work under this item.

All bolts on mechanical joints and flange joints shall have corrosion protection caps. The bolts shall have sufficient lengths to accommodate the installation of the corrosion protection caps.

Certain mechanical-joint fittings at critical locations may be designated by the Engineer to have wedge-type thrust restraint glands. The furnishing and installing of these types of thrust restraint glands shall be as specified and paid for under separate Contract items.

Basis of Payment: The work will be paid for at the Contract unit price per Pound for DUCTILE IRON WATER MAIN FITTINGS.

WATER SERVICE LINE

Delete Article 562.01 and replace it with the following:
"562.01 Description

- (a) Water service 2" diameter and less.

Existing services less than 1.5" diameter will be increased to 1.5" diameter. Existing services that are 2" diameter shall be replaced with a 2" diameter services. Existing services between 1.5" and 2" diameter shall be replaced with the same size as the existing service.

Work shall consist of the disconnection of the existing water service, removal of existing curb box to depth shown on plans or directed by engineer, tapping the new water main, and extending new copper services perpendicularly from the new water main either to the new service box to be installed in the parkway, as close to the old service box as possible (Partial Replacement), and up to the meter in the home (Full Replacement), as shown on the Drawings and/or as directed by the Engineer.

Full replacement of existing lead water service lines will extend from the new water main into the home. For full replacements, the Contractor shall contact each Property Owner to schedule and review the water service installation work (including water service line route, location of access pits, installation method, extent of demolition, and extent of restoration) in order to confirm water service line entrance type and location of all underground utilities (including sprinkler lines, underground electric, natural gas lines, and other utilities that may be present), and document the existing conditions of the property on a Property Owner Agreement Form. The Contractor shall obtain a signed Property Owner Agreement Form and submit it to the Engineer at least seven days in advance of the commencement of the work on the property. The Contractor shall notify each Property Owner at least 72 hours in advance of the commencement of the work on their property, providing each Property Owner with the date and start time of both external and internal work on their property. The Contractor shall provide a telephone number where Property Owners can call to be updated on the status of the work on their property and general project information. The Contractor shall minimize the time period for each water service installation to minimize the disruption to the Property Owner. The Contractor must coordinate and schedule the work with the Property Owner so that the water service to the home will be interrupted for less than four (4) hours. The Contractor will not be reimbursed for any downtime associated with the water service line installation work and shall provide temporary water using materials approved by the National Science Foundation (NSF) and Engineer, or bottled water in any instance where the water is shut-off for more than four (4) hours for the duration of the delay until the service line has been completed. For all work and specification requirements, Galvanized services will be treated as lead services.

For existing lead water service connections that require a Partial Replacement; The City of Evanston requires the use of minimum 2.0 feet (5.0 feet max.) straight pipe of high-density polyethylene (HDPE) water service tubing (CTS) be installed prior to connecting to existing lead water service on the private side. HDPE conforming to the minimum requirements of cell classification 445574E as defined and described in ASTM D3350 with a resin designation code of PE4710 by the Plastic Pipe Institute will be used.

For Existing Lead Water Service Partial Replacement Connections; (Installation of Min. 2' (5' max) HDPE pipe)

- 1) End of tubing or pipe must be round, free of burrs and clean for both existing lead and new HDPE pipes by using pipe cutter only.
 - 2) For HDPE plastic tubing or pipe, push the appropriate size of liner in until the flare on the liner rests solidly against the end of the tubing or pipe.
 - 3) Insert tubing into the body of fitting until it contacts the stop inside the fitting.
 - 4) Tighten the compression nut until it makes contact with the machined shoulder of the fitting.
- (c) Any lead or galvanized iron/steel service piping removed shall be handled and disposed of in accordance with all local, state and federal laws and regulations.
- (d) Replacement work within private property shall be coordinated with the Engineer and Property Owner prior to starting any work.
- (e) All plumbing demolition and installation work shall be performed by an Illinois Licensed Plumber.
- (f) For service line replacements into a house, the Contractor may either expand the existing pipe penetration into the house or create a new penetration (through the floor or wall as appropriate) for the new water service line, as approved by the Engineer. The new water service line shall extend into the building to the meter, and then the Contractor shall connect into the existing interior plumbing. Contractor shall provide fittings to connect new water service to new meter. The Contractor shall repair and provide a watertight seal of the pipe penetration through the building in accordance with this Section, the Drawings, and as approved by the Engineer.
- (g) The installation of the new water service line for each property has not been individually detailed. The water service line connection details were developed to generally illustrate to the Contractor the plumbing elements. The piping and equipment shown on the water service line connection details are not to scale and do not show every offset or fitting, nor every hanger or support, or structural difficulty that may be encountered. To carry out the intent and purpose of the water service line connection, Contractor shall field verify all piping and plumbing systems to ensure all necessary plumbing parts are installed to provide a complete and safe transfer of the domestic water service without extra charge to the Owner or Property Owner. The Contractor shall be responsible to coordinate the system installation and routing with the work of all trades.
- (h) The Contractor shall maintain an on-site supply of anticipated specialty fittings, including but not limited to corporation stops, curb stops, curb boxes, reducing fittings, etc., such that the work proceeds without impacting the execution of the work and causing a delay in connecting the service.
- (i) All existing water services which are 3-inch in diameter will be changed to 4-inch services and reduced to 3-inch at the point of connection to the existing service.
- (j) Water service 4" or greater in diameter

Work shall consist of installing appropriately sized tee fittings with an attached valve(s), and extending the new ductile iron service from the new water main to the new service box to be installed in the parkway as shown on the drawings and/or as directed by the Engineer.

Ductile Iron Pipe Water Service. All ductile iron pipe shall be thickness class 52 in accordance with AWWA Standard Specifications for Ductile Iron Pipe, External Zinc-Based Coated, centrifugally cast in Metal Molds for water or other Liquids

AWWA -C151 latest revision. Coating: The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m² of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. The coating system shall conform in every respect to ISO 8179-1 "Ductile iron pipes - External zinc-based coating - Part 1: Metallic zinc with finishing layer. Second edition 2004-06-01." The whole of the above Specifications shall apply. The pipe shall be furnished with push on joints. All pipe shall be cement mortar lined inside and bituminous coated outside, in accordance with Sec. 51 8 ANSI A21.51 (AWWA C104 and C151). All ductile iron pipes must be clearly marked by the manufacturer to indicate pipe classification or pipe thickness. Unmarked pipe will not be accepted.

Add the following Subparagraphs to Article 562.02:

"(a.) **Copper Pipe.** Copper pipe shall be copper water tube, a minimum of 1.5" diameter, Type K, soft temper, conforming to ASTM-B88 and ASTM-B251 of the inside diameter indicated on the Drawings. Flare type fitting for underground pipe. Solder or flared style fittings for above grade (inside the home) pipe. The pipe shall be marked with the manufacturer's name or trademark and a mark indicative of the type of pipe. The outside diameter of the pipe and minimum weight per foot of the pipe shall not be less than that listed in ASTM B251, Table 11.

(b) **Stops and Fittings.** All corporation stops, curb stops, and connection couplings shall be fabricated of bronze alloy and shall be provided with outlets suitable for connections. All connections shall be made with flare-type couplings. Stops and fittings shall be as manufactured by Ford Co. and shall be in accordance with AWWA Specifications. The curb stops shall be Minneapolis pattern (City of Evanston Standard). Corporation stops and curb stops shall be the non-restricting ball valve type.

(c.) **Curb Boxes.** The curb boxes shall be cast iron Minneapolis pattern base, for rigid assembly, extension-type adjustable to 6-foot bury or as required to make flush with the existing ground elevation. The boxes shall be complete with a lid marked 'WATER' and pentagon brass plug. Curb boxes shall be as manufactured by Mueller Co.

(d.) **Tapping Saddles.** All Tapping saddles shall be Smith-Blair 317 or Ford FC 202, and shall conform to the following specifications: Tapping saddles shall have an epoxy-coated ductile iron body with stainless steel straps. The threads shall be C.C. The saddles shall fit an oversized cast iron pipe in the sizes listed.

(d.) **Pipe Hangers, Supports and Restraints.** All supports shall be designed to adequately secure the pipe against excessive dislocation due to internal flow forces, thermal expansion/contraction, and all probable external forces such as personal contact or equipment. Supports for copper pipe shall be copper plated or shall have a minimum 1/16-inch plastic coating. Support spacing for copper piping and tubing 2-inches in diameter and smaller shall not exceed 5-feet, and greater than 2-inches in diameter shall not exceed 8-feet. Where pipe supports come in contact with copper piping, provide protection from galvanic corrosion by wrapping pipe with 1/16-inch thick neoprene sheet material and galvanized protection shield. Anchoring devices shall be selected by the Contractor depending on the size, spacing, and other necessary parameters. Anchoring devices shall withstand shear and pullout loads imposed by loading and spacing on a particular support. Expansion anchors shall be equal to Kwik Bolt as manufactured by Hilti USA, Tulsa, Oklahoma; or Wej-it by Wej-it Expansion Products, Inc., Broomfield, CO. The length of the expansion bolts shall be sufficient to place the wedge portion of the bolt a minimum of 1-inch behind the steel reinforcement.

(d.) **Electrical Grounding.** Wire shall be 6 AWG copper wire or conducting metal braid shall be woven from 240 strands of 30 AWG tinned copper wires and be capable of carrying fault current comparable to that of 6 AWG copper wire, 3M Corp., Scotchbrand 25. Water pipe ground clamps shall be cast bronze saddle type, and of the correct size for the pipe, as manufactured by Thomas & Betts Co. Cat. No. 2, similar by Burndy; O.Z. Gedney Co., and the correct size for the pipe.

(e.) **Property Owner Agreement Form.** All property owner agreement forms shall be completed and executed between the Contractor and the Property Owner and provided to the City Engineer seven days in advance of work on the specified private property.

(f.) **Preconstruction and Post Construction Layout Drawings.** For full lead water service line replacement pre and post construction layout drawings shall be prepared by the Contractor and submitted to the Engineer for approval. Pre-construction layout drawings showing the proposed location of the new water service line, size and location of all pits and excavations required to complete the work, fence removal, bushes, trees, landscaping and other items that require demolition shall be approved by the Engineer prior to proceeding with the work. Post-construction layout drawings shall be completed showing any changes to the pre-construction layout drawing following completion of the work and shall include the new water tap location, curb box location, and location where new water service enters the home.

Shop Drawings for water system components shall be submitted for approval as soon as possible, but not less than thirty (30) calendar days prior to the time when the components are intended to be installed. Post construction drawings shall be submitted prior to payment for a full water service replacement.”

Add the following paragraphs to Article 562.03:

"Care should be taken in installing new water services so as to have the least interruption of service to the water customer. This work will require disruptions of water service. The Contractor shall notify the Property Owner not less than 48-hours in advance of planned disruptions. The water main will not be turned off for the installation of water services. The City of Evanston Utilities Division personnel are the only persons authorized to turn on and off water main valves.

The Contractor shall perform a limited hazardous materials survey (consisting of inspection and/or testing) for lead-based paint and asbestos containing materials as part of the contract unit price of Full Replacements. Owner reserves the right to request testing for lead-based paint or asbestos containing materials. Remediation of lead-based paint or asbestos-containing materials shall be paid for separately

All underground water service lines shall be installed using trenchless methods, shall be augered in place, and shall be a minimum of five (5) feet in depth unless otherwise approved by the Engineer. Water services may be installed in open cut trench when various trenchless excavation methods are not feasible for use due to field conditions and when approved by the Engineer. The City will pay the pavement removal and replacement using separate unit price items when open cut is approved. Open cut installation, when approved by the Engineer will be paid for in accordance with the unit price items in this section, and will include all the necessary work associated with trenching such as labor, materials, equipment and all other associated items. The Contractor will patch any concrete as needed to restore the work area. Any additional finishing restoration required inside of the home, following a service line replacement, will be performed by others. Provide pipe insulation if cover is less than 5-feet (Incidental to various pay Items) when approved by the Engineer. The Contractor may select a boring tool, mechanical drill or jack, at his option, to form the passage through the soil for insertion of water services under existing pavements. The size of the passage shall be just large enough to accommodate the service, but not so large to cause post-construction

subsidence of the pavement. The service line shall be capped or plugged during the insertion process to prevent the entrance of soil. The insertion and receiving pits shall be backfilled in accordance with Section 208.

The replacement service line shall be one continuous length (no couplings in the new copper tubing will be allowed) and be of sufficient length to allow for some movement for trench settling after placement of the backfill material.

After laying the new full copper service, a new curb stop and curb box will be installed. The old curb stop shall be closed and disconnected from the new service line.

All above ground (interior) water service piping shall be installed with associated piping, valves, hangers, supports, restraints, valves, meter and fittings to connect to the new water service meter. Reductions in size to connect to the existing water service shall be performed using reducing fittings. After installation and connection to the interior plumbing system, and verification of valve and meter operation, Contractor shall remove all debris and excess material from the work area inside the home. If miscellaneous items had been relocated to obtain access to the meter, those items shall be placed back to their original location prior to construction.

Contractor shall keep the existing and new water service line clean during installation. Following installation, the service pipe shall be flushed clean prior to disconnecting the existing service. After each service is reconnected, the Contractor shall verify that the water service is supplying adequate water. The Contractor will be charged for any labor and materials used by the City Utilities Division to correct any problems that arise due to Contractor's efforts.

All valves shall be installed at locations to allow for easy operation through access panels, doors, or adjacent to equipment and other features. Valves shall be installed in a horizontal upright position, and not a downward facing position from a horizontal plane.

Pipe penetrations shall be performed by the Contractor at the home for full replacements. Contractor shall furnish all labor, materials, equipment and incidentals required and install pipe penetration assemblies at all floor and wall penetrations. Generally, penetration details are called out and referenced on the Drawings. Where penetrations are required the most conservative penetration detail shown on the detail sheets shall be utilized as appropriate for the piping type, the wall or floor construction and the rating of the wall or floor penetrated. Where existing tile, brick, wood or other floor or wall material must be cut through, existing materials should be preserved as much as possible and set aside for the Property Owner to re-install. In preparation of surfaces for penetrations, the Contractor shall prepare those surfaces that will be in contact with the final seal. The surfaces shall be free of dirt, loose rust, oil, wax, grease, curing compounds, laitance, loose concrete or other deleterious and all other preparations in accordance with manufacturer's recommendations. The sealing produce shall be placed in such a manner, for the consistency necessary for each application, to assure that the space to be sealed is completely filled. For installation of a sleeve, install sleeve for piping passing through wall penetrations. Select the sleeve of the size large enough for the water service pipe in accordance with the manufacturer's written instructions. Sleeves shall be cut to length for mounting flush with all interior/exterior surfaces. Use grout or silicone sealant to seal the space outside of the sleeve. All seals shall be cured in accordance with the manufacturer's written instructions.

Cutting, coring, and patching will be made to existing construction. Coring shall be used where wall sleeves are to be installed. All cutting and rough patching shall be performed by the Contractor will all interior dust being controlled to minimize dust within the home. Finish patching shall be the responsibility of the Contractor. Contractor shall coordinate and perform all cutting, fitting and

patching including attendant excavation and backfill to make sure several parts fit together properly. Provide penetration of structural surfaces and materials for installation of piping. Execute excavating and backfilling by methods which will prevent settlement or damage to other work. When excavating in close proximity to piping or other items subject to damage, use hand excavation. Refine entire surfaces as necessary to provide an even finish to match adjacent surfaces. Contractor shall remove all debris resulting from cutting, coring, and patching to the satisfaction of the Engineer.

Cutting shall be performed in a manner so as to limit the extent of patching and performed with a concrete saw and diamond saw blades of the proper size. Cutting shall not be performed in locations where wall sleeves will be installed unless approved by the Engineer. Contractor to provide for control of the slurry generated by sawing operations on both sides of the wall and from below when cutting a floor. When cutting reinforced concrete wall or floor, the cutting shall be done so as not to damage the bond between the concrete and reinforcing steel left in structure. Cut shall be made so that steel neither protrudes nor is recessed from face of the cut. Contractor shall saw cut concrete and masonry prior to breaking out intended sections.

All existing water services abandoned in place shall have all existing corporation and curb stop valves closed prior to abandonment. Cut ends shall be fully crimped. Water service pipe entering the home shall be removed prior to concrete patching.

Install any electrical grounding across meter at the completion of the work.

Water Service work to replace the Public Side of the water service will be paid for at the Contract unit price per EACH service connection for SHORT WATER SERVICE – PARTIAL REPLACEMENT up to 2 inches in diameter, less than 30 LF in length (from water main to curb box), counted in place.

Water Service work to replace the entire water service line including both the Public and Private Side will be paid for at the Contract unit price per EACH service connection for SHORT WATER SERVICE – FULL REPLACEMENT up to 2 inches in diameter, from water main to meter, counted in place.

Water Service work to replace the Public Side of the water service will be paid for at the Contract unit price per EACH service connection for LONG WATER SERVICE - PARTIAL REPLACEMENT up to 2 inches in diameter, 30 LF to 70 LF in length (from water main to curb box), counted in place.

Water Service work to replace the entire water service line including both the Public and Private Side will be paid for at the Contract unit price per EACH service connection for WATER SERVICE LINE, 2" DIA OR LESS, LONG - FULL REPLACEMENT, from water main to meter, counted in place.

Water Service work will be paid for at the Contract unit price per EACH service connection for WATER SERVICE 4 inches or greater diameter, less than 50 LF in length, counted in place.

Water Service work to install interior copper pipe more than 2-feet from the interior of the house foundation shall be paid for at the Contract unit price per LINEAR FOOT for INTERIOR COPPER PIPE, up to 2 inches in diameter.

Short services are defined as locations where the water main is 30 feet or less from the curb box. Long services are defined as locations where the water main is more than 30 feet and less than 70 feet from the curb box.

The Contract unit price WATER SERVICE shall be payment in full for all materials, labor, and equipment required for: site preparation, including removal, replacement and/or repair of fences and other site objects; excavation, including removal and disposal of existing pipes, structures, and excess excavated materials; protection, support and repair of damage to existing utilities; support of installation pit walls; shoring and bracing; dewatering of installation pits; trenchless installation (augering/boring/jacking, or other trenchless methods) of new service line, disconnection of existing water services and extending new services from the new water main to the new service box to be installed in the parkway and to the meter as necessary; new curb boxes, couplings, fittings, joint materials, corporation stops, tapping saddles, curb stops, service piping, and buffalo boxes; machine tapping of holes into new water main; supply backfill material, backfill placement, compaction and compaction testing; disinfection; testing; correction of defects; concrete coring and patching of home; demolition within the work area; access pits; abandonment of the existing water service; homeowner coordination; and other related work required to complete the installation which is not included under other Payment Items.

Additionally, for WATER SERVICE 4 inches or greater, the price shall also include all water service pipes, tees (no tapping saddles allowed) and two (2) 4-inch or greater resilient wedge type valves and valve boxes per each long service, and one (1) 4-inch or greater resilient wedge type valve and valve box per each service to match the diameter of the new service. Services less than or equal to 1.5 inches shall be replaced with a 1.5 inch diameter minimum service. Services between 1.5 inches to 2 inches shall be replaced with the same diameter as the existing service. Existing services greater than 2 inches and less than 4 inches shall be replaced with 4 inch services. Services over 4 inches shall be replaced with the same diameter as the existing service. The Contractor is advised that specific liquidated damages apply to disruptions of individual water services as indicated in Bid Form of Contract Documents.

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (PROJECT SPECIFIC)

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

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

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

Site 3887V-1: Commercial Building: 1925–1931 Central Street, Evanston, Cook County

- Station 2410+00 to Station 2411+80 (CL Central Street), from 0 ft to 35 ft LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, and Manganese.

Sites 3887V-6, 3887V-7, 3887V-8: Mixed-Use Building: 1913 to 1921 Central Street and 2601-2605 Prairie Avenue, 1907 to 1911 Central Street, 1901 to 1903 Central Street, Evanston, Cook County

- Station 2411+80 to Station 2412+60 (CL Central Street), from 0 ft to 60 ft LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameter: Manganese.
- Station 2412+60 to Station 2414+05 (CL Central Street), from 0 ft to 35 ft LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, and Lead.

Site 3887V-9: Chase Bank – 1900 Central Street, Evanston, Cook County

- Station 2411+80 to Station 2414+45 (CL Central Street), from 0 ft to 35 ft RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium, Iron, Lead, Manganese, and Nickel.

Site 3887V-10: Railroad and Metra Station: 1826 Central Street, Evanston, Cook County

- Station 2414+05 to Station 2415+25 (CL Central Street), 0 ft to 35 ft LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(b)(1).
- Station 2414+45 to Station 2416+25 (CL Central Street), from 0 ft to 40 ft RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with

Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Iron, Lead, Manganese, and Nickel.

Site 3887V-12: Mixed-Use Building: 1805 to 1815 Central Street and 2603 to 2609 Broadway Avenue, Evanston, Cook County

- Station 2416+45 to Station 2418+10 (CL Central Road), from 0 ft to 40 ft LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameter: Manganese.

Site 3887V-15: Mixed-Use Building – 1804 to 1814 Central Street, Evanston, Cook County

- Station 2416+25 to Station 2418+10 (CL Central Street), from 0 ft to 40 ft RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene, Lead, and Manganese.

Work Zones

Three distinct OSHA HAZWOPER work zones (exclusion, decontamination, and support) shall apply to projects adjacent to or within sites with documented leaking underground storage tank (LUST) incidents, or sites under management in accordance with the requirements of the Site Remediation Program (SRP), Resource Conservation and Recovery Act (RCRA), or Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or as deemed necessary. For this project, the work zones apply for the following ISGS PESA Sites:
None

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION

Effective: August 1, 2012

Revised: February 2, 2017

In addition to the Contractor's equal employment opportunity (EEO) affirmative action efforts undertaken as required by this Contract, the Contractor is encouraged to participate in the incentive program described below to provide additional on-the-job training to certified graduates of the IDOT pre-apprenticeship training program, as outlined in this Special Provision.

IDOT funds, and various Illinois community colleges operate, pre-apprenticeship training programs throughout the State to provide training and skill-improvement opportunities to promote the increased employment of minority groups, disadvantaged persons and women in all aspects of the highway construction industry. The intent of this IDOT Pre-Apprenticeship Training Program Graduate (TPG) special provision (Special Provision) is to place these certified program graduates on the project site for this Contract in order to provide the graduates with meaningful on-the-job training. Pursuant to this Special Provision, the Contractor must make every reasonable effort to recruit and employ certified TPG trainees to the extent such individuals are available within a practicable distance of the project site.

Specifically, participation of the Contractor or its subcontractor in the Program entitles the participant to reimbursement for graduates' hourly wages at \$15.00 per hour per utilized TPG trainee, subject to the terms of this Special Provision. Reimbursement payment will be made even though the Contractor or subcontractor may also receive additional training program funds from other non-IDOT sources for other non-TPG trainees on the Contract, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving reimbursement from another entity through another program, such as IDOT through the TPG program. With regard to any IDOT funded construction training program other than TPG, however, additional reimbursement for other IDOT programs will not be made beyond the TPG Program described in this Special Provision when the TPG Program is utilized.

No payment will be made to the Contractor if the Contractor or subcontractor fails to provide the required on-site training to TPG trainees, as solely determined by IDOT. A TPG trainee must begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee must remain on the project site through completion of the Contract, so long as training opportunities continue to exist in the relevant work classification. Should a TPG trainee's employment end in advance of the completion of the Contract, the Contractor must promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor must supply a written report for the reason the TPG trainee involvement terminated, the hours completed by the TPG trainee on the Contract, and the number of hours for which the incentive payment provided under this Special Provision will be, or has been claimed for the separated TPG trainee. Finally, the Contractor must maintain all records it creates as a result of participation in the Program on the Contract, and furnish periodic written reports to the IDOT District EEO Officer that document its contractual performance under and compliance with this Special Provision. Finally, through participation in the Program and reimbursement of wages, the Contractor is not relieved of, and IDOT has not waived, the requirements of any federal or state labor or employment law applicable to TPG workers, including compliance with the Illinois Prevailing Wage Act.

METHOD OF MEASUREMENT: The unit of measurement is in hours.

BASIS OF PAYMENT: This work will be paid for at the contract unit price of \$15.00 per hour for each utilized certified TPG Program trainee (TRAINEES TRAINING PROGRAM GRADUATE). The estimated total number of hours, unit price, and total price must be included in the schedule

of prices for the Contract submitted by Contractor prior to beginning work. The initial number of TPG trainees for which the incentive is available for this contract is 1.

The Department has contracted with several educational institutions to provide screening, tutoring and pre-training to individuals interested in working as a TPG trainee in various areas of common construction trade work. Only individuals who have successfully completed a Pre-Apprenticeship Training Program at these IDOT approved institutions are eligible to be TPG trainees. To obtain a list of institutions that can connect the Contractor with eligible TPG trainees, the Contractor may contact: HCCTP TPG Program Coordinator, Office of Business and Workforce Diversity (IDOT OBWD), Room 319, Illinois Department of Transportation, 2300

S. Dirksen Parkway, Springfield, Illinois 62764. Prior to commencing construction with the utilization of a TPG trainee, the Contractor must submit documentation to the IDOT District EEO Officer for the Contract that provides the names and contact information of the TPG trainee(s) to be trained in each selected work classification, proof that that the TPG trainee(s) has successfully completed a Pre-Apprenticeship Training Program, proof that the TPG is in an Apprenticeship Training Program approved by the U.S. Department of Labor Bureau of Apprenticeship Training, and the start date for training in each of the applicable work classifications.

To receive payment, the Contractor must provide training opportunities aimed at developing a full journeyworker in the type of trade or job classification involved. During the course of performance of the Contract, the Contractor may seek approval from the IDOT District EEO Officer to employ additional eligible TPG trainees. In the event the Contractor subcontracts a portion of the contracted work, it must determine how many, if any, of the TPGs will be trained by the subcontractor. Though a subcontractor may conduct training, the Contractor retains the responsibility for meeting all requirements imposed by this Special Provision. The Contractor must also include this Special Provision in any subcontract where payment for contracted work performed by a TPG trainee will be passed on to a subcontractor.

Training through the Program is intended to move TPGs toward journeyman status, which is the primary objective of this Special Provision. Accordingly, the Contractor must make every effort to enroll TPG trainees by recruitment through the Program participant educational institutions to the extent eligible TPGs are available within a reasonable geographic area of the project. The Contractor is responsible for demonstrating, through documentation, the recruitment efforts it has undertaken prior to the determination by IDOT whether the Contractor is in compliance with this Special Provision, and therefore, entitled to the Training Program Graduate reimbursement of \$15.00 per hour.

Notwithstanding the on-the-job training requirement of this TPG Special Provision, some minimal off-site training is permissible as long as the offsite training is an integral part of the work of the contract, and does not compromise or conflict with the required on-site training that is central to the purpose of the Program. No individual may be employed as a TPG trainee in any work classification in which he/she has previously successfully completed a training program leading to journeyman status in any trade, or in which he/she has worked at a journeyman level or higher.

LR-107-4 SPECIAL PROVISION FOR INSURANCE

LR107-4
Page 1 of 1

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:

City of Evanston

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

DEPARTMENT OF TRANSPORTATION
 Bureau of Local Roads & Streets
 SPECIAL PROVISION
 FOR
LR 1030-2 LOCAL QUALITY ASSURANCE/ QUALITY MANAGEMENT QC/QA
 Effective: January 1, 2022

Replace the first five paragraphs of Article 1030.06 of the Standard Specifications with the following:

“1030.06 Quality Management Program. The Quality Management Program (QMP) will be Quality Control / Quality Assurance (QC/QA) according to the following.”

Delete Article 1030.06(d)(1) of the Standard Specifications.

Revise Article 1030.09(g)(3) of the Standard Specifications to read:

“(3) If core testing is the density verification method, the Contractor shall provide personnel and equipment to collect density verification cores for the Engineer. Core locations will be determined by the Engineer following the document “Hot-Mix Asphalt QC/QA Procedure for Determining Random Density Locations” at density verification intervals defined in Article 1030.09(b). After the Engineer identifies a density verification location and prior to opening to traffic, the Contractor shall cut a 4 in. (100 mm) diameter core. With the approval of the Engineer, the cores may be cut at a later time.”

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

“(2) After final rolling and prior to paving subsequent lifts, the Engineer will identify the random density verification test locations. Cores or nuclear density gauge testing will be used for density verification. The method used for density verification will be as selected below.

Density Verification Method	
<input type="checkbox"/>	Cores
<input checked="" type="checkbox"/>	Nuclear Density Gauge (Correlated when paving ≥ 3,000 tons per mixture)

Density verification test locations will be determined according to the document “Hot- Mix Asphalt QC/QA Procedure for Determining Random Density Locations”. The density testing interval for paving wider than or equal to 3 ft (1 m) will be 0.5 miles (800 m) for lift thicknesses of 3 in. (75 mm) or less and 0.2 miles (320 m) for lift thicknesses greater than 3 in. (75 mm). The density testing interval for paving less than 3 ft (1 m) wide will be 1 mile (1,600 m). If a day’s paving will be less than the prescribed density testing interval, the length of the day’s paving will be the interval for that day. The density testing interval for mixtures used for patching will be 50 patches with a minimum of one test per mixture per project.

If core testing is the density verification method, the Engineer will witness the Contractor coring, and secure and take possession of all density samples at the density verification locations. The Engineer will test the cores collected by the Contractor for density according to Illinois Modified AASHTO T 166 or AASHTO T

275.

If nuclear density gauge testing is the density verification method, the Engineer will conduct nuclear density gauge tests. The Engineer will follow the density testing procedure detailed in the document "Illinois Modified ASTM D 2950, Standard Test Method for Density of Bituminous Concrete In-Place by Nuclear Method".

A density verification test will be the result of a single core or the average of the nuclear density tests at one location. The results of each density test must be within acceptable limits. The Engineer will promptly notify the Contractor of observed deficiencies."

Revise the seventh paragraph and all subsequent paragraphs in Section D. of the document "Hot-Mix Asphalt QC/QA Initial Daily Plant and Random Samples" to read:

"Mixtures shall be sampled from the truck at the plant by the Contractor following the same procedure used to collect QC mixture samples (Section A). This process will be witnessed by the Engineer who will take custody of the verification sample. Each sample bag with a verification mixture sample will be secured by the Engineer using a locking ID tag. Sample boxes containing the verification mixture sample will be sealed/taped by the Engineer using a security ID label."

LPC 663



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as
amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Green Bay Road Improvements Project Office Phone Number, if available: _____

Physical Site Location (address, including number and street):

Green Bay Road from McCormick Boulevard to Isabella Street

City: Evanston State: IL Zip Code: 60201

County: Cook Township: Evanston

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 42.0648 Longitude: - 87.69918

(Decimal Degrees) (-Decimal Degrees)

Identify how the lat/long data were determined:

GPS Map Interpolation Photo Interpolation Survey Other

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

Approximate Start Date (mm/dd/yyyy): _____ Approximate End Date (mm/dd/yyyy): _____

Estimated Volume of debris (cu. Yd.): _____

II. Owner/Operator Information for Source Site

Site Owner

Name: _____ City of Evanston

Street Address: _____ 2100 Ridge Avenue

PO Box: _____

City: Evanston State: IL

Zip Code: 60201 Phone: 847-866-2967

Contact: _____ Sat Nagar, P.E.

Email, if available: _____ snagar@cityofevanston.org

Site Operator

Name: _____

Street Address: _____

PO Box: _____

City: _____ State: _____

Zip Code: _____ Phone: _____

Contact: _____

Email, if available: _____

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: Green Bay Road Improvements Project Latitude: 42.06480 Longitude: - 87.69918

Uncontaminated Soil Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

- a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a):

A database review was completed by H&H/GZA Inc. in the 2020 PESA for the Project Area, which consists primarily of commercial and residential properties. Twenty-two (22) potentially impacted properties (PIP) were identified in connection with the Project Area as part of PESA activities. Refer to the attachments for additional information.

- 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]:

18 H&H borings (2024), analysis VOC, PNA, total RCRA Metals, TCLP-Cr (SB-16), pH. 7 INTERRA borings (2020), analysis VOC, SVOC, total RCRA Metals, PCBs, pesticides, pH. Results achieve MACs at SB-1, SB-2, SB-6, SB-9, SB-14, SB-16 to SB-18, B-01, B-05, B-07, and B-09. Excluded from CCDD: SB-3 to SB-5, SB-7, SB-8, SB-10 to SB-13, SB-15, B-03, and B-11.

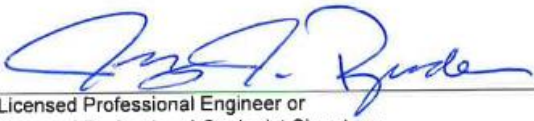
IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

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.
Street Address: 915 Harger Rd Suite 330
City: Oak Brook State: IL Zip Code: 60523
Phone: (630) 684-9100

Jeremy J. Reynolds, P.G.
Printed Name:



Licensed Professional Engineer or
Licensed Professional Geologist Signature:

Jul 10, 2024
Date:



P.E. or L.P.G. Seal:

IDOT Article 669.05 Soil Classifications

Soil Boring ID	Sample Classification	Parameter(s) Exceeding MAC(s)	Soil Boring Stationing, Offset	Soil Disposal Classification (Max Excavation Depth) ¹
SB-1	Unrestricted ²	None	STA 1243+19 / 36' LT	Surface to Bottom of Excavation: CCDD (Unrestricted)
SB-2	Unrestricted ²	None	STA 2704+30 / 15' RT	Surface to Bottom of Excavation: CCDD (Unrestricted)
SB-3	669.05(b)(1)	pH	STA 1236+89 / 25' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-4	669.05(b)(1)	pH	STA 1234+44 / 25' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-5	669.05(b)(1)	pH	STA 1230+94 / 24' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-6	Unrestricted ²	None	STA 2501+52 / 15' LT	Surface to Bottom of Excavation: CCDD (Unrestricted)
SB-7	669.05(b)(1)	pH	STA 1229+51 / 24' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-8	669.05(b)(1)	pH	STA 1227+39 / 25' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-9	Unrestricted ²	None	STA 1224+06 / 24' LT	Surface to Bottom of Excavation: CCDD (Unrestricted)
SB-10	669.05(b)(1)	pH	STA 1223+07 / 24' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-11	669.05(b)(1)	pH	STA 1221+37 / 24' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-12	669.05(b)(1)	pH	STA 1219+62 / 21' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-13	669.05(b)(1)	pH	STA 1216+04 / 22' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-14	Unrestricted ²	None	STA 1214+04 / 23' LT	Surface to Bottom of Excavation: CCDD (Unrestricted)
SB-15	669.05(b)(1)	pH	STA 1209+51 / 24' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
SB-16	Unrestricted ²	None	STA 1204+00, 41' LT	Surface to Bottom of Excavation: CCDD (Unrestricted)
SB-17	Unrestricted ²	None	STA 2207+43 / 8' RT	Surface to Bottom of Excavation: CCDD (Unrestricted)
SB-18	Unrestricted ²	None	STA 1036+36 / 9' RT	Surface to Bottom of Excavation: CCDD (Unrestricted)
B-01*	Unrestricted	None	STA 1027+45 / 2' RT	Surface to Bottom of Excavation: CCDD (Unrestricted)
B-03*	669.05(b)(1)	pH	STA 1212+44 / 1' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
B-05*	Unrestricted	None	STA 1218+13 / 4' RT	Surface to Bottom of Excavation: CCDD (Unrestricted)
B-07*	Unrestricted	None	STA 1226+26 / 4' RT	Surface to Bottom of Excavation: CCDD (Unrestricted)
B-09*	Unrestricted	None	STA 1232+38 / 5' RT	Surface to Bottom of Excavation: CCDD (Unrestricted)
B-11*	669.05(b)(1)	pH	STA 1241+52 / 2' LT	Surface to Bottom of Excavation: Site Reuse or Landfill as Non-Special Waste (NSW)
B-12**x	Not Applicable			

¹ Based on maximum excavation depth planned per Contract Plans. To avoid summarizing the full boring depth based on most-restrictive soil classification per sample depths analyzed, multiple options are summarized based on planned excavation depth throughout Project Corridor.

² "Unrestricted" refers to material that is approved for CCDD disposal at any facility location (e.g., Within Chicago Corporate Limits, Within a Populated Area in a MSA County, Within a Populated Area in Non-MSA County, and Outside a Populated Area).

* Soil boring advanced and sampled by Interra, Inc. (July 2020). The location is approximate and based on the Sample Location Map provided by Interra 2020 Environmental Report.

x Interra previously collected soil boring B-12 from within Central Road ROW which is within IDOT Jurisdiction and therefore excluded from this report.

Bold/Shaded Refers to areas which are within a CCDD Exclusion Area AND within a Construction Worker Caution Area.

Bold/Shaded Refers to areas which must be disposed of as Non-Special Waste if off-site disposal is required.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 North Grand Avenue, East; Post Office Box 19276; Springfield, IL 62794-9276

Division of Public Water Supplies

Telephone 217/782-1724

PUBLIC WATER SUPPLY CONSTRUCTION PERMIT

SUBJECT: EVANSTON (IL0310810)

Permit Issued to:
City of Evanston
2100 Ridge Avenue
Evanston, IL 60201

PERMIT NUMBER: 1146-FY2023

DATE ISSUED: June 20, 2023
PERMIT TYPE: Water Main Extension

The issuance of this permit is based on plans and specifications prepared by the engineers/architects indicated, and are identified as follows. This permit is issued for the construction and/or installation of the public water supply improvements described in this document, in accordance with the provisions of the Environmental Protection Act, Title IV, Sections 14 through 17, and Title X, Sections 39 and 40, and is subject to the conditions printed on the last page of this permit and the ADDITIONAL CONDITIONS listed below.

FIRM: City of Evanston, Public Works Agency

NUMBER OF PLAN SHEETS: 13

TITLE OF PLANS: "2023 Central St & Main St Water Main Improvements Project, PW-WM-2303, Bid No. 23"

APPLICATION RECEIVED DATE: April 17, 2023

PROPOSED IMPROVEMENTS:

*** The installation of approximately 40 feet of 16-inch diameter watermain, 200 feet of 10-inch diameter watermain, and 840 feet of 8-inch diameter watermain along Central Street and Main Street in Evanston, IL.*****

ADDITIONAL CONDITIONS:

1. All water mains shall be satisfactorily disinfected prior to use pursuant to Ill. Adm. Code, Title 35, Subtitle F, Section 602.310. Two consecutive sets of samples collected at least 24 hours apart must show the absence of coliform bacteria. The samples must be collected from every 1,200 feet of new water main along each branch and from the end of the line. An operating permit must be obtained before the project is placed in service.

2. When the owner or operator of a community water supply replaces a water main, the community water supply shall identify all lead service lines connected to the water main and shall comply with the requirements of Section 17.12 of the Act, 415 ILCS 5/17.12 for lead service line replacement. Galvanized service line must also be replaced if the galvanized service line is or was connected downstream to the lead piping. A statement must be submitted with the Application for Operating Permit indicating either that no full or partial lead service lines were identified or that Section 17.12 of the Act was complied with for this project.

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Agency Act (415 ILCS 5/39) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

These standard conditions shall apply to all permits which the Agency issues for construction or development projects which require permits under the Division of Water Pollution Control, Air Pollution Control, Public Water Supplies and Land Pollution Control. Special conditions may also be imposed by the separate divisions in addition to these standard conditions.

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year after this date of issuance unless construction or development on this project has started on or prior to that date.
2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.
4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:
 - a. to enter at reasonable times the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit.
 - b. to have access to and copy at reasonable times any records required be kept under the terms and conditions of this permit.
 - c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.
 - d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.
 - e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.
5. The issuance of this permit:
 - a. shall not be considered as in any manner affecting the title of the permits upon which the permitted facilities are to be located;
 - b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
 - c. does not release the permittee from compliance with the other applicable statues and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
 - d. does not take into consideration or attest to the structural stability of any units or parts of the project;
 - e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability directly or indirectly for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
6. These standard conditions shall prevail unless modified by special conditions.
7. The Agency may file a complaint with Board of modification, suspension or revocation of a permit:
 - a. upon discovery that the permit application misrepresentation or false statements or that all relevant facts were not disclosed; or
 - b. upon finding that any standard or special conditions have been violated; or
 - c. upon any violation of the Environmental Protection Act or any Rules or Regulation effective thereunder as a result of the construction or development authorized by this permit.

3. When replacing water mains with lead service lines or partial lead service lines connected to them, the owner or operator of the community water supply shall provide the owner or operator of each potentially affected building that is serviced by the affected lead service lines or partial lead service lines, as well as the occupants of those buildings, with an individual written notice. The lead informational notice shall be provided at least 14 days prior to permitted water main work. The notification provided by the community water supply must satisfy the requirements of Section 17.12(jj) of the Act, 415 ILCS 5/17.12(jj). A copy of the notice used must be submitted to the Agency with the Application for Operating Permit.

4. The permit approval is for the Application, Schedule A, Schedule B, and 13 plan sheets received on April 17, 2023 and additional information received on May 30, 2023 and June 1, 2023.

JML:LKW

cc: Elgin Regional Office
IDPH/DEH Plumbing & Water Quality Program
Cook County Health Department



Jenny Larsen, P.E.
Working Supervisor, Permit Section – Unit B
Division of Public Water Supplies

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Agency Act (415 ILCS 5/39) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

These standard conditions shall apply to all permits which the Agency issues for construction or development projects which require permits under the Division of Water Pollution Control, Air Pollution Control, Public Water Supplies and Land Pollution Control. Special conditions may also be imposed by the separate divisions in addition to these standard conditions.

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year after this date of issuance unless construction or development on this project has started on or prior to that date.
2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.
4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:
 - a. to enter at reasonable times the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit.
 - b. to have access to and copy at reasonable times any records required be kept under the terms and conditions of this permit.
 - c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.
 - d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.
 - e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.
5. The issuance of this permit:
 - a. shall not be considered as in any manner affecting the title of the permits upon which the permitted facilities are to be located;
 - b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
 - c. does not release the permittee from compliance with the other applicable statues and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
 - d. does not take into consideration or attest to the structural stability of any units or parts of the project;
 - e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability directly or indirectly for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
6. These standard conditions shall prevail unless modified by special conditions.
7. The Agency may file a complaint with Board of modification, suspension or revocation of a permit:
 - a. upon discovery that the permit application misrepresentation or false statements or that all relevant facts were not disclosed; or
 - b. upon finding that any standard or special conditions have been violated; or
 - c. upon any violation of the Environmental Protection Act or any Rules or Regulation effective thereunder as a result of the construction or development authorized by this permit.

Lead Informational Notice

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Dear Water Customer:

Today's Date: _____

This notice contains important information about your water service and may affect your rights. We encourage you to have this notice translated in full into a language you understand and before you make any decisions that may be required under this notice.

Diese Mitteilung beinhaltet wichtige Informationen über Ihre Wasserversorgung und könnte Ihre Rechte beeinflussen. Wir bitten Sie, dass Sie diese Mitteilung vollständig in eine Sprache übersetzen lassen, die Sie verstehen, bevor Sie eventuelle Entscheidungen treffen, welche im Zusammenhang mit dieser Benachrichtigung erforderlich sind.

Ang abisong ito ay naglalaman ng mahalagang impormasyon tungkol sa iyong serbisyo sa tubig at maaaring makaapekto sa iyong mga karapatan. Hinihikayat namin kayo na isalin nang buo ang abisong ito sa wikang naiintindihan ninyo at bago kayo gumawa ng anumang mga desisyon na maaaring kailanganin sa abisong ito.

આ સૂચનામાં તમારી પાણીની સેવા વિશે મહત્વપૂર્ણ માહિતી શામેલ છે અને તમારા અધિકારોને અસર કરી શકે છે. અમે તમને પ્રોત્સાહિત કરીએ છીએ કે તમે આ સૂચના હેઠળ જરૂરી હોય તેવા કોઈપણ નિર્ણયો લો તે પહેલાં તમે આ સૂચનાને તમે સમજો છો તે ભાષામાં સંપૂર્ણ ભાષાંતર કરો.

Niniejsze zawiadomienie zawiera ważne informacje na temat Państwa przyłącza wodociągowego i może mieć wpływ na Państwa prawa. Przed podjęciem jakichkolwiek decyzji, które mogą być wymagane na mocy niniejszego zawiadomienia, zachęcamy Państwa do przetłumaczenia całości niniejszego zawiadomienia na język, który będzie dla Państwa zrozumiały.

يحتوي هذا الإشعار على معلومات مهمة حول خدمة المياه لديك، وقد يؤثر على حقوقك. قبل اتخاذ أي قرارات قد تكون مطلوبة بموجب هذا الإشعار فإننا نشجعك على ترجمته بالكامل إلى لغة تفهمها.

اس نوٹس میں آپ کی پانی کی سروسز سے متعلق اہم ترین معلومات موجود ہیں اور یہ آپ کے حقوق کو متاثر کر سکتا ہے۔ ہم آپ کو ترغیب دیں گے کہ آپ اس نوٹس کا مکمل طور پر اس زبان میں ترجمہ کروائیں جو آپ سمجھتے ہوں اور ممکن ہے کہ آپ کے کوئی فیصلہ لینے سے قبل اس نوٹس کے تحت یہ درکار بھی ہو۔

Este aviso contiene información importante sobre su servicio de agua y puede afectar sus derechos. Lo animamos a que traduzca este aviso a un idioma que comprenda antes de tomar cualquier decisión que pueda ser necesaria en virtud del mismo.

이 통지서에는 귀하의 권리에 영향을 미칠 수 있는 수도 서비스에 관한 중요한 정보가 제시되어 있습니다. 이 통지서에서 요구하는 결정을 내리기 전에 이 통지서를 귀하가 이해할 수 있는 언어로 번역하시기 바랍니다.

本通知包含有关您的供水服务的重要信息，可能会影响到您的权利。在您做出本通知所要求的任何决定之前，我们鼓励您将本通知完整地翻译成您可理解的语言。

Lead Informational Notice

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Our water system will soon begin a water line maintenance and/or construction project that may affect the lead concentrations in your drinking water. Lead, a metal found in natural deposits, is harmful to human health, especially young children, and pregnant women. It can cause damage to the brain and kidneys and can interfere with the production of red blood cells that can carry oxygen to all parts of your body. The most common exposure to lead is swallowing or breathing in lead paint chips and dust. However, lead in drinking water can also be a source of lead exposure. In the past, lead was used in some water service lines and household plumbing materials. Lead in water usually occurs through corrosion of plumbing products containing lead; however, disruption (construction or maintenance) of lead service lines may also temporarily increase lead levels in the water supply. This disruption may be sometimes caused by water main maintenance/replacement.

The purpose of this notice is for informational purposes only. While it's not known for certain whether this construction project will adversely affect the lead (if present) plumbing in and outside your home, below describes some information about the project and some preventative measures you can take to help reduce the amount of lead in drinking water.

Project Start Date: _____ Project expected to be completed by: _____

Project location and description: _____

What you can do to reduce lead exposure in drinking water during this construction project:

- *Run your water to flush out lead.* If the plumbing in your home is accessible; you may be able to inspect your own plumbing to determine whether you have a lead service line or lead solder. Otherwise, you will most likely have to hire a plumber.
 - If you do not have a lead service line, running the water for 1 – 2 minutes at the kitchen tap should clear the lead from your household plumbing to the kitchen tap. Once you have done this, fill a container with water and store it in the refrigerator for drinking, cooking, and preparing baby formula throughout the day.
 - If you do have a lead service line, flushing times can vary based on the length of your lead service line and the plumbing configuration in your home. The length of lead service lines varies considerably. Flushing for at least 3 – 5 minutes is recommended.
- *Use cold water for drinking, cooking, and preparing baby formula.* Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.
- *Look for alternative sources or treatment of water.* You may want to consider purchasing bottled water or a water filter that is certified to remove "total lead".
- *Clean and remove any debris from faucet aerators on a regular basis.*
- *Do not boil water to remove lead. Boiling water will not reduce lead.*
- *Purchase lead-free faucets and plumbing components.*
- *Remove the entire lead service line.*
- *Test your water for lead.* Call us at: _____ to find out how to get your water tested for lead. While we do not do the testing, we can provide a list of laboratories certified to do the testing. Laboratories will send you the bottles for sample collection. Please note that we are not affiliated with any laboratory, and they will charge you a fee.
 - If test results indicate a lead level above 15 ug/L, bottled water should be used by pregnant women, breast-feeding women, young children, and formula-fed infants.



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Division of Public Water Supplies, Permit Section Application for Operating Permit

This form may be completed online, a copy saved locally and printed before it is signed. You may also complete a printed copy manually. Submit the completed and signed form to the Illinois EPA, Division of Public Water Supplies, Permit Section at the address listed above.

Facility Name: City of Evanston Facility ID: IL0310810
 Address 1: 2100 Ridge Avenue Construction Permit No.: 1146-FY2023
 Address 2: _____ Permit Type: Water Main
 City: Evanston State: IL Zip Code: 60201 Date Permit Issued: June 20, 2023
 County: Cook

Project Title: 2023 Central St & Main St Water Main Improvements Project, PW-WM-2303, Bid No. 23

Firm Name: City of Evanston, Public Works Agency

Project Status: Final
 Partial

Partial A, B, C, etc.

Application Requirements (check when complete):

- Permit Number, Facility Number, and Facility Name identified on the Lab Report(s).
- Sample results attached to the Application.
(If a new well was constructed, provide a copy of the sample results as required by Section II, Part g of the C-I application).
- For water main projects subject to Section 17.12 of the Act (415 ILCS 5/17.12), attach a statement on lead service lines and a copy of the lead informational notice (if one was distributed). See the instructions page for additional information.

If you select Partial, you must also submit the following items:

- Cover letter describing which sections were completed.
- General project layout plans.
- For water main projects, identify the length the Partial: _____ LF

Date of Project Completion: _____ (Provide the date construction was completed on the project or partial)

Certified Operator in Responsible Charge:

Name: _____ Classification: _____ Number: _____

Telephone: _____ Email (optional): _____

Owner of the Completed Project:

Name: _____ Title: _____ Telephone: _____

Address: _____ City: _____ State: _____ Zip Code: _____

The Owner hereby certifies that the project named and described has been constructed in accordance with plans and specifications approved by the Illinois EPA. See instructions for further information. For Verbal Approvals, please call 217-782-1724.

Owner/Authorized Personnel Signature

Date

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))

FOR IEPA USE ONLY

This operating permit 1146-FY2023 issued on _____ is valid until revoked.

This permit is valid only for the work completed under the Construction Permit of the same number.

David C. Cook, P.E.
Manager, Permit Section
Division of Public Water Supplies

Instructions for Operating Permit Application

The Operating Permit Application must be submitted for all Public Water Supply projects that required a construction permit. The Operating Permit *must* be obtained before the project is placed in service.

Fill out the top section using the corresponding Construction Permit for reference.

- **Facility Name** is the name of the village, city or entity distributing community water supplies.
- **Facility ID Number** can be found on the Construction Permit. This number is specific to your facility.
- **Address** is the same as the address on the Construction Permit.
- **Construction Permit Number** is the assigned permit number of the corresponding Construction Permit. The Operating Permit and the corresponding Construction Permit will have the same permit number.
- **Permit Type** identifies whether the project involved is a Water Main, a Plant Improvement or Both.
- **Date Permit Issued** is the date the Construction Permit was granted.
- **Date of Project Completion** is the date construction was completed for the section of project you are requesting the Operating Permit for. If you are requesting an Operating Permit for a Partial project, the Date of Project Completion is the date construction was completed on that partial section. The Date of Project Completion will never be a date in the future, and must be a date *after* the issue date of the Construction Permit.
- **Title of Project** is the same title of project listed on the corresponding Construction Permit. The Operating Permit and the Construction Permit will have the same Title of Project.
- **Firm Name** is the engineering entity that designed the project.

Project Status will either be Final or Partial.

- **Final:** If construction on the project is complete, you will select **Final**.
- **Partial:** If construction on the total project is only *partially* complete, but you want to operate the completed section, you will select **Partial**. If this is the first partial, you will identify it as "Partial A", if this is the second partial, you will identify it as "Partial B" and so forth. Once the last partial section has been completed, identify it as such and also select Final in the Project Status.

The **Certified Operator in Responsible Charge** and **Owner of the Completed Project** should fill out his/her respective section. Please print your name legibly and sign where appropriate. By signing the application, the owner hereby certifies that the project named and described has been constructed in accordance with plans and specifications approved by the Illinois EPA, including specifications for bacteriological samples, and that bacteriological samples (if required) were taken under the supervision of a representative from the Public Water Supply. The owner also certifies that the project will be operated in accordance with the provisions of the Illinois Environmental Protection Act and the Rules and Regulations adopted by the Illinois Pollution Control Board pursuant to provisions of the Act.

Requests for **Verbal Approval** and questions can be addressed at (217) 782-1724.

Disinfection and bacteriological analysis must be performed for the completed project in accordance with the requirements of AWWA C651, C652, C653 or C654. For projects requiring these procedures, the sample results must be attached to the application. The construction permit number should be clearly visible on the sample results. Two consecutive sets of samples collected at least 24 hours apart must show the absence of coliform bacteria and the presence of a 0.5 mg/L minimum free chlorine residual or a 1.0 mg/L minimum combined chlorine residual. Samples must be collected every 1,200 feet of new water main along each branch and from the end of the line unless otherwise approved by the Illinois EPA.

All operating permit applications for water main construction permits that have additional conditions for lead service line inventory, replacement, and notification must include a statement indicating either that no full or partial lead service lines were identified or that they were replaced in accordance with Section 17.12 of the Act, 415 ILCS 5/17.12. A copy of the **Lead Informational Notice** satisfying the requirements of Section 17.12(jj) of the Act, 415 ILCS 5/17.12(jj) must also be attached. The notice must contain the following statement translated in the Spanish, Polish, Chinese, Tagalog, Arabic, Korean, German, Urdu, and Gujarati languages: "This notice contains important information about your water service and may affect your rights. We encourage you to have this notice translated in full into a language you understand and before you make any decisions that may be required under this notice."

This form may be completed online, a copy saved locally and printed before it is signed. You may also complete a printed copy manually. Submit the completed form to the Illinois EPA, Bureau of Water, Permit Section at the following address:

**Illinois Environmental Protection Agency
Division of Public Water Supplies, Permit Section #13
1021 North Grand Avenue East, PO Box 19276
Springfield, IL 62794-9276**



WATERSHED MANAGEMENT PERMIT

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

LOCAL SEWER SYSTEMS SECTION
111 EAST ERIE STREET, CHICAGO, IL 60611
www.mwrdd.org/wmo

INSTRUCTIONS FOR COMPLETING PERMIT FORM

Submit a signed copy of the Watershed Management Permit application electronically through the Watershed Management Ordinance Permit Application Submittal System (WPASS) at www.mwrdd.org/wpPASS. Include any other applicable permit schedules with the application and check the appropriate boxes. Submit a signed and sealed copy of the plan set. If applicable, submit the Fee Payment Voucher and Payment Receipt. Payments can be mailed to the address at the top of this form or submitted electronically at <https://mwrdd.org/form/lsss-payment>. For any questions or assistance with submitting the permit application please email us at wpass@mwrdd.org or call (312) 751-3255.

NAME AND LOCATION OF PROJECT

Name of Project (as shown on the plan set): Green Bay Road Corridor Improvements

Location of Project (address or with respect to two major streets): Green Bay Road between McCormick Boulevard and Isabella Street

Municipality (Township, if unincorporated): Evanston, IL

PIN (include all impacted, use additional sheet if necessary): _____, _____
 _____, _____

SEWER AREA OF PROJECT

- Combined Sewer Area Separate Sewer Area

APPLICABLE PERMIT SCHEDULES

- | | | |
|--|-----------------------|---------------|
| <input checked="" type="checkbox"/> Project Information (Required for all projects) | WMO Schedule A | (Page 5 of 9) |
| <input checked="" type="checkbox"/> Sewer Summary (Required for all projects) | WMO Schedule B | (Page 6 of 9) |
| <input checked="" type="checkbox"/> Sewer Connections (Required for all projects) | WMO Schedule C | (Page 7 of 9) |
| <input type="checkbox"/> Detention & Stormwater Management Facilities (WMO) | WMO Schedule D | (2 Pages) |
| <input type="checkbox"/> Detention & Stormwater Management Facilities (Legacy) | WMO Schedule D-Legacy | (4 Pages) |
| <input type="checkbox"/> Public 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 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"/> Outfall, Direct Connection, District Owned or Leased Property | WMO Schedule O | (1 Page) |
| <input type="checkbox"/> Soil Erosion and Sediment Control | WMO Schedule P | (1 Page) |
| <input type="checkbox"/> Recording and Maintenance | WMO Schedule R | (2 Pages) |
| <input type="checkbox"/> Wetlands and Wetland Buffer Areas | WMO Schedule W | (2 Pages) |
| <input type="checkbox"/> Current Survey of Property Interests (Required for most projects) | Exhibit A | |

DISTRICT or AUTHORIZED MUNICIPALITY USE ONLY

Application Received: _____ Permit Issued: _____

PERMIT ISSUED BY: DISTRICT Authorized Municipality

WMO PERMIT

GENERAL CONDITIONS

WMO Permit Number: _____

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, Combined 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

WMO PERMIT

GENERAL CONDITIONS

WMO Permit Number: _____

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

WMO PERMIT

GENERAL CONDITIONS

WMO Permit Number: _____

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 three (3) years after the date of permit issuance. 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.
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 other condition(s) shall govern.

WMO SCHEDULE A
PROJECT INFORMATION

Watershed Management Permit No.

1. **NAME OF PROJECT** Green Bay Road Corridor Improvements
(as shown on the plans)

2. **APPURTENANCES** (check all applicable items)
- Siphon Drop Manholes Public Lift Station (Submit Sch. E) Outfalls (Submit Sch. O)
- Stream Crossing Direct Connections to District → Describe _____

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 City of Evanston, MWRDGC

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 _____

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 involve the following? (check all applicable items)

Floodplain/Floodway/Riparian (Schedule H) Wetlands/Buffers/Riparian (Schedule W)

7. **SIZE OF PROJECT**

A. Total contiguous ownership interest	<u>N/A</u> acres	C. Before development	<u>N/A</u> acres
B. Development Area	<u>N/A</u> acres	D. After development	<u>N/A</u> acres

8. **STORMWATER MANAGEMENT**

A. Is project in the service area of a District permitted detention facility?
 No Yes → District Permit No. _____

B. Is stormwater management provided under this permit?
 No Yes → Required by: District (Submit Sch. D) Other

C. Type of stormwater management

Runoff Control Volume Control Detention Storage

WMO SCHEDULE B

SEWER SUMMARY

Watershed Management Permit No.

PROJECT NAME: Green Bay Road Corridor Improvements

(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 SC	Choose an SC	Choose an SC	Choose an SC	Choose SC	Choose an SC	Choose SC
Pipe Size (in.)	6"	6"	8"	8"	8"	8"	10"
Total Length (ft.)							
Min. slope used (%)	0.15% (ex)	0.15% (ex)	0.15% (ex)	0.15% (ex)	0.15% (ex)	0.15% (ex)	0.15% (ex)
Pipe Material *	PVC	CMP	RCP	PVC	VCP	DIP	RCP
Total Manholes							
Total Cleanouts							
Catch Basin/Inlets	2	1	19	8	3	1	1

* Pipe material and joint specifications must be shown on plans. See Technical Guidance Manual for acceptable specifications.

Sewer construction in floodplain: No Yes → FPE _____ ft.

Sanitary Manholes in floodplain N/A

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 This project includes roadway resurfacing, traffic signal improvements, and incidental sewer structure reconstruction and adjustments.

- 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 Spot replacements to accommodate structure reconstruction and adjustments in combined sewer areas

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 B

SEWER SUMMARY

Watershed Management Permit No.

PROJECT NAME: Green Bay Road Corridor Improvements

(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 SC	Choose an SC	Choose an SC	Choose an SC	Choose SC	Choose an SC	Choose SC
Pipe Size (in.)	10"	10"	12"	12"	12"	10"	12"
Total Length (ft.)						96'	34'
Min. slope used (%)	0.15% (ex)	0.15% (ex)	0.15% (ex)	0.15% (ex)	0.15% (ex)	0.15% (ex)	0.15% (ex)
Pipe Material *	PVC	DIP	RCP	DIP	VCP	RCP	RCP
Total Manholes							
Total Cleanouts							
Catch Basin/Inlets	1	2	4	3	1	0	0

* Pipe material and joint specifications must be shown on plans. See Technical Guidance Manual for acceptable specifications.

WMO SCHEDULE C SEWER CONNECTIONS

Watershed Management Permit No.

(FILL OUT ALL SECTIONS THAT APPLY)

1. BUILDING CONNECTION DATA

A. RESIDENTIAL BUILDINGS

<input type="checkbox"/>	Single Family	Total dwelling units *		Spot replacemer	
		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.

ENGINEERING CERTIFICATIONS

Watershed Management Permit No.

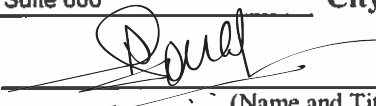
CERTIFICATE BY DESIGN ENGINEER: I hereby certify that the project described herein has been designed in accordance with the requirements set forth in this application and all applicable ordinances, rules, regulations, local, state and federal laws, and design criteria of the issuing authority; that the 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: Kimley-Horn And Associates, Inc. Telephone: (630) 487 - 3469



Address: 4201 Winfield Rd, Suite 600 City: Warrenville Zip: 60555

Signature:  Date: 6/28/2024
(Name and Title)

Email Address: Sagar.sonar@kimley-horn.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.

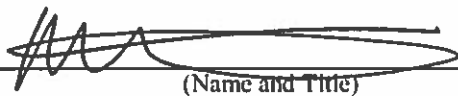
I hereby certify that the project area is within the municipal corporate limits. YES NO

Owner of Local Sewer System: City of Evanston



Professional Engineer: Sat Nagar Telephone: 847-866-2967

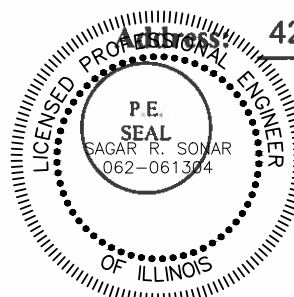
Address: 2500 Ridge Avenue City: Evanston Zip: 60201

Signature:  Date: 6/28/2024
(Name and Title)

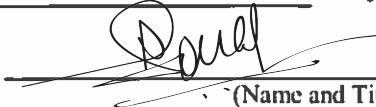
Email Address: snagar@cityofevanston.org

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: Kimley-Horn and Associates Telephone: 630-487-3469



Address: 4201 Winfield Rd, Suite 600 City: Warrenville Zip: 60555

Signature:  Date: 6/28/2024
(Name and Title)

Email Address: sagar.sonar@kimley-horn.com

SPECIAL CONDITIONS

Watershed Management Permit No.

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: Sagar Sonar

Address : 4201 Winfield Rd, Suite 600, Warrenville, IL 60555

Email : saqar.sonar@kimley-horn.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>City of Evanston</u>	Owner _____
Address <u>2100 Ridge Avenue</u>	Address _____
City <u>Evanston</u> Zip <u>60201</u>	City _____ Zip _____
Signature	Signature _____
Name <u>Sat Nagar</u> (Print)	Name _____ (Print)
Title <u>Senior Project Manager</u>	Title _____
Date <u>6/28/2024</u> Phone <u>8478662967</u>	Date _____ Phone _____
Email <u>snagar@cityofevanston.org</u>	Email _____

REVIEW AND APPROVAL BY THE DISTRICT OR AUTHORIZED MUNICIPALITY	
Reviewed by: _____ <small>(Local Sewer Systems) or (Professional Engineer)</small>	Date _____
Approved for Issue	
Approved by: _____ <small>(For the Director of Engineering) or (Enforcement Officer)</small>	Date _____



IDOT Public Improvement Yes No

IDOT Permit No. D24-0035

Utility Reference No.

Name of Applicant: City of Evanston E-mail: snagar@cityofevanston.org

Mailing Address: Public Works Agency, City of Evanston, 2100 Ridge Ave City: Evanston State: IL Zip Code: 60201

hereinafter termed the Permittee, request permission and authority to occupy, and to do certain work herein described on, the right-of-way of the State highway known as Central Street (FAU 1301) Section

in Cook County.

Location Reference Begin 90' W of Prairie Ave End 150' E of Broadway/Poplar Ave

The work is described in detail below and/or on the attached sketch or plans.

Water main (8" and 10") installation along Central Street, with connections to existing water main at Prairie Ave, Green Bay Road, Broadway Ave/Poplar Ave. The project will also include sewer replacements.

This permit covers the operation and presence of specified equipment, material or facility on the right-of-way that may be related to the authorized work. A copy of this permit must be present when crews or equipment occupy highway right-of way. Failure to comply may result in the cessation of all construction.

This permit is subject to conditions and restrictions of Part 530 of Title 92 of the Illinois Administrative Code, Accommodation of Utilities on Right-of-Way of the Illinois State Highway System. The removal, relocation or modification of facilities permitted to occupy the right-of-way is governed by Section 9-113 of the Illinois Highway Code, as amended by Public Act 92-0470. The Permittee agrees to comply with the requirements of these laws and with all terms and conditions established by this permit. This permit is subject to revocation by the Department on violation of the terms and conditions governing its use.

Permit Applicant must notify the Department by email at DOT.D1.UtilitiesUnit@illinois.gov 72 hours prior to the start of work & within 72 hours of work completion. Failure to notify the Department prior to start of work can result in revocation of the permit. Should you have any questions concerning this permit, please contact our Region One Utilities Coordinator at (847) 705-4258.

Permittee Signature & Date: [Signature] 6/20/2024

Name of Permittee or Agent (Print or Type): Sat Nagar

Mailing Address: Public Works Agency, City of Evanston, 2100 Ridge Ave

City: Evanston State: IL Zip Code: 60201

NOTICE

IT IS A CONDITION OF THIS PERMISSION THAT A COPY OF THIS PERMIT BE ON THE JOB SITE DURING ALL WORK. FAILURE TO COMPLY IS CAUSE TO STOP ALL CONSTRUCTION

The work authorized by this permit shall be completed by July 30, 2025 or within calendar days (180 days max.) after the date of approval by the Department, otherwise the permit will be considered null and void.

Public Improvement Projects only: The anticipated letting date is 09/20/24. The permit allowing occupancy and work on state right-of-way is approved. The Utility Coordination Council established by the Department in the area covered by this permit is the district in which the permit was issued.

Regional Engineer or Designee Signature & Date: [Signature] 6/25/2024

ATTENTION STATE ELECTRICAL CONTRACTOR (773-287-7600) OR dispatch@meade100.com MUST BE NOTIFIED 72 HOURS IN ADVANCE OF CONSTRUCTION TO LOCATE IDOT UNDERGROUND ELECTRICAL FACILITIES

IDOT PERMIT # D24-0035

This permit is subject to the conditions and restrictions established in accordance with the Illinois Highway Code and Article 530 of Title 92 of the Illinois Administrative Code including but not limited to the following:

- (1) The applicant represents all parties interested and shall furnish material, do all work, pay all costs and shall in a reasonable length of time restore the damaged portions of the highway to a condition similar to that existing before the commencement of the described work, including any landscape restoration necessary. See Section 530.250 of Title 92).
- (2) The proposed work shall be located and constructed to the satisfaction of the regional engineer or his duly authorized representative. No revisions or additions shall be made to the proposed work on the right-of-way without the written permission of the regional engineer or his duly authorized representative (See Section 530.200 of Title 92). **In certain circumstances the Department may require that the construction plans and/or the as-built documents be sealed by an Illinois Registered Professional Engineer.** Typical of such projects would be petroleum or gas pipelines.
- (3) The applicant shall at all times conduct the work in such a manner as to minimize hazards to vehicles and pedestrian traffic. All signs, barricades, flaggers, etc., equipped for traffic control shall be furnished by the applicant. See Section 530.240 of Title 92).
- (4) The applicant must ascertain the presence of Highway Authority Agreements established in accordance with 35 Ill. Admin. Code Section 742.1020 in the path of its proposed installation and take precautions to protect its works, human health and the environment in those areas. See Section 530.240 of Title 92). Where contamination is encountered through excavation in the ROW, it should be managed offsite and IDOT's gene atom number for the appropriate county may be used.
- (5) The applicant shall not trim, cut or in any way disturb any trees or shrubbery along the highway without the approval of the regional engineer or his duly authorized representative. See Section 530.600 of Title 92).
- (6) The facilities authorized to occupy the right-of-way by this permit are subject to removal, relocation or modification by the permittee at no expense to the State on notice given by the Department in accordance with Section 9-113 of the Illinois Highway Code, as amended. Participation by the permittee in the UTILITY Coordination Council identified on page one of this permit is required as a condition of this permit. The permittee shall cooperate with the Department with the scheduling of any removal, relocation or modification deemed necessary for highway or highway safety purposes, and, if Utility Coordination Council participation is required by this permit, with the activities of the council identified on the first page of this permit. See Section 9-113 of the Illinois Highway Code.) Use of and compliance with current IDOT Traffic Control Standards will be required.
- (7) If the applicant and the District cannot agree either on whether the permit should be issued or on what conditions would be appropriate, the applicant may, within 30 days of the issuance of written notice of the District's position, appeal the District's determination to the Chief of the Department's Central Bureau of Operations. See Section 530.900 of Title 92).
- (8) The permittee agrees to fully comply with the following legal obligations in advance of entering and while upon any right-of-way within the Illinois State Highway System.
 - a) Only a permit issued by the Department under this Act will satisfy the "written consent" requirement of Section 9-113 of the Illinois Highway Code (the Code).
 - b) A permit from the Department grants a license only to undertake certain activities in accordance with this Act on a State right-of-way, and does not create a property right or grant authority to the permittee to impinge on the rights of others who may have an interest in the right-of-way. Such others might include an owner of an underlying fee simple interest if the right-of-way is owned as an easement or dedication of right of way, an owner of an easement, or another permittee.
 - c) It shall be the responsibility of the permittee to ascertain the presence and location of existing above-ground or underground facilities on the highway right-of-way to be occupied by their proposed facilities. The Department will make its permit records available to a permittee for the purpose of identifying possible facilities. When notified of an excavation or when requested by the Department, a permittee shall locate, physically mark, and indicate the depth of its underground facilities within 48 hours excluding weekends and holidays.
 - d) The permittee shall avoid conflicts with any existing underground or above-ground facilities on or near the highway right-of-way. Both the Department and J.U.L.I. shall be contacted for assistance during the application process.
 - e) The permittee shall comply with all other applicable laws relating to the placement of utility lines.
 - f) The issuance of a utility permit by the Department does not excuse the permittee from complying with any existing statutes, local regulations or requirements of other Department (e.g., of size and of weight vehicles) or the requirements of other State agencies including, but not limited to, the following:
 Illinois Commerce Commission, Illinois Department of Agriculture
 Illinois Department of Natural Resources, Illinois Department of Mines and Minerals
 Illinois Environmental Protection Agency, Illinois Historical Preservation Agency
 - g) Rights of abutting and underlying property owners are protected by common law and Sections 9-113 and 9-127 of the Code. The permittee will address these rights prior to initiating activities on State right-of-way. The Department will not be a party in any negotiations between the utility and abutting property owners.
 - h) In no case shall the permittee be construed to give an entity any easement, leasehold or other property interest of any kind in, upon, under, above or along the State highway right-of-way.
 - i) Each person responsible for a utility, in place on the effective date of this Act, on a State highway right-of-way shall notify the Department in writing, if that facility does not comply with this Act. The Department shall treat such a notice as a request for a variance under Section 530.130. Until informed that a variance will not be granted, a person responsible for a pre-existing utility will not be in violation of this Act. The failure to provide such notice constitutes a violation of this Act and of the utility accommodation permit (if any) and would justify the imposition of the sanctions set forth in Section 530.810.

Work to be coordinated with Department reps:

Department Rep 1	None

Department Rep 2	None

Utility Contact (e-mail)	None
Sat Naga / snaga@cityofevanston.org	

Work to be done by:

Contractor

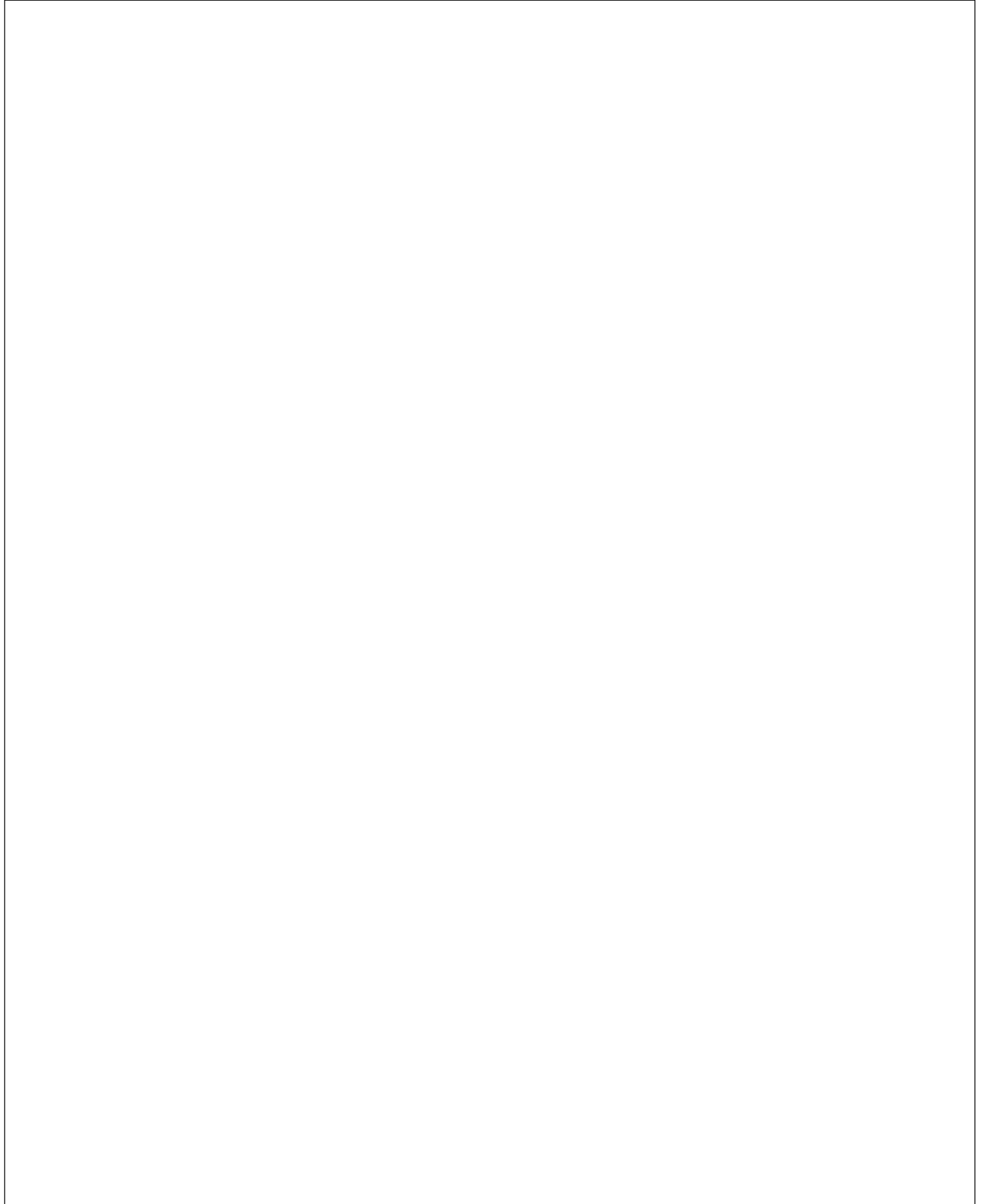
TBD

Daytime (None)	Agency (None)

Traffic control operation:

Number of lane closures	Time of closures
None, parking only	8:00 AM

The latest Manual on Uniform Traffic Control Devices (MUTCD) and the latest Illinois Supplement to the MUTCD are to be used for signage. All traffic control devices used within IDOT right-of-way shall conform to the latest IDOT Standard Specifications for Road and Bridge Construction, IDOT Highway Standards, and IDOT approved product list.



AGGREGATE SUBGRADE IMPROVEMENT (BDE)

Effective: April 1, 2012

Revised: April 1, 2022

Add the following Section to the Standard Specifications:

“SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT

303.01 Description. This work shall consist of constructing an aggregate subgrade improvement (ASI).

303.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate	1004.07
(b) Reclaimed Asphalt Pavement (RAP)	1031.09

303.03 Equipment. The vibratory roller shall be according to Article 1101.01, or as approved by the Engineer. Vibratory machines, such as tampers, shall be used in areas where rollers do not fit.

303.04 Soil Preparation. The minimum immediate bearing value (IBV) of the soil below the improved subgrade shall be according to the Department’s “Subgrade Stability Manual” for the aggregate thickness specified.

303.05 Placing and Compacting. The maximum nominal lift thickness of aggregate gradations CA 2, CA 6, and CA 10 when compacted shall be 9 in. (225 mm). The maximum nominal lift thickness of aggregate gradations CS 1, CS 2, and RR 1 when compacted shall be 24 in. (600 mm).

The top surface of the aggregate subgrade improvement shall consist of a layer of capping aggregate gradations CA 6 or CA 10 that is 3 in. (75 mm) thick after compaction. Capping aggregate will not be required when aggregate subgrade improvement is used as a cubic yard pay item for undercut applications.

Each lift of aggregate shall be compacted to the satisfaction of the Engineer. If the moisture content of the material is such that compaction cannot be obtained, sufficient water shall be added so that satisfactory compaction can be obtained.

303.06 Finishing and Maintenance. The aggregate subgrade improvement shall be finished to the lines, grades, and cross sections shown on the plans, or as directed by the Engineer. The aggregate subgrade improvement shall be maintained in a smooth and compacted condition.

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

303.08 Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) or ton (metric ton) for AGGREGATE SUBGRADE IMPROVEMENT or at the contract unit price per square yard (square meter) for AGGREGATE SUBGRADE IMPROVEMENT, of the thickness specified.”

Add the following to Section 1004 of the Standard Specifications:

“1004.07 Coarse Aggregate for Aggregate Subgrade Improvement (ASI). The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate shall be crushed gravel, crushed stone, or crushed concrete. In applications where greater than 24 in. (600 mm) of ASI material is required, gravel may be used below the top 12 in (300 mm) of ASI.

(b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials.

(c) Gradation.

(1) The coarse aggregate gradation for total ASI thickness less than or equal to 12 in. (300 mm) shall be CA 2, CA 6, CA 10, or CS 1.

The coarse aggregate gradation for total ASI thickness greater than 12 in. (300 mm) shall be CS 1 or CS 2 as shown below or RR 1 according to Article 1005.01(c).

COARSE AGGREGATE SUBGRADE GRADATIONS					
Grad No.	Sieve Size and Percent Passing				
	8”	6”	4”	2”	#4
CS 1	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 2		100	80 ± 10	25 ± 15	

COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)					
Grad No.	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 1	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 2		100	80 ± 10	25 ± 15	

(2) Capping aggregate shall be gradation CA 6 or CA 10.”

Add the following to Article 1031.09 of the Standard Specifications:

“(b) RAP in Aggregate Subgrade Improvement (ASI). RAP in ASI shall be according to Articles 1031.01(a), 1031.02(a), 1031.06(a)(1), and 1031.06(a)(2), and the following.

- (1) The testing requirements of Article 1031.03 shall not apply.
- (2) Crushed RAP used for the lower lift may be mechanically blended with aggregate gradations CS 1, CS 2, and RR 1 but it shall be no greater than 40 percent of the total product volume. RAP agglomerations shall be no greater than 4 in. (100 mm).
- (3) For capping aggregate, well graded RAP having 100 percent passing the 1 1/2 in. (38 mm) sieve may be used when aggregate gradations CS 1, CS 2, CA 2, or RR 1 are used in the lower lift. FRAP will not be permitted as capping material.

Blending shall be through calibrated interlocked feeders or a calibrated blending plant such that the prescribed blending percentage is maintained throughout the blending process. The calibration shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered.”

80274

CEMENT, TYPE IL (BDE)

Effective: August 1, 2023

Add the following to Article 302.02 of the Standard Specifications:

“(k) Type IL Portland-Limestone Cement1001”

Revise Note 2 of Article 352.02 of the Standard Specifications to read:

“Note 2. Either Type I or Type IA portland cement or Type IL portland-limestone cement shall be used.”

Revise Note 1 of Article 404.02 of the Standard Specifications to read:

“Note 1. The cement shall be Type I portland cement or Type IL portland-limestone cement.”

Revise Article 1019.02(a) of the Standard Specifications to read:

“(a) Cement, Type I or IL1001”

80449

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

Revised: April 1, 2019

Revise Article 107.40(b) of the Standard Specifications to read:

“(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

- (1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.
- (2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.
- (3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days.”

Revise Article 107.40(c) of the Standard Specifications to read:

“(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

- (1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

- (2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the

Contractor's yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

- (3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13.”

Revise Article 108.04(b) of the Standard Specifications to read:

“(b) No working day will be charged under the following conditions.

- (1) When adverse weather prevents work on the controlling item.
- (2) When job conditions due to recent weather prevent work on the controlling item.
- (3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.
- (4) When delays caused by utility or railroad adjustments prevent work on the controlling item.
- (5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.
- (6) When any condition over which the Contractor has no control prevents work on the controlling item.”

Revise Article 109.09(f) of the Standard Specifications to read:

“(f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead

other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited.”

Add the following to Section 109 of the Standard Specifications.

“109.13 Payment for Contract Delay. Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

- (a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.
- (b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.
 - (1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to \$5,000,000	One Project Superintendent
Over \$ 5,000,000 - up to \$25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over \$25,000,000 - up to \$50,000,000	One Project Manager, One Project Superintendent, One Engineer, and

	One Clerk
Over \$50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid for according to Article 109.04.

When an extended traffic control adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

80384

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

Revised: November 1, 2014

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

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment’s respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 ^{1/}	600-749	2002
	750 and up	2006
June 1, 2011 ^{2/}	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 ^{2/}	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

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

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<http://www.epa.gov/cleandiesel/verification/verif-list.htm>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit

device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

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

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

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

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

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

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

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

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

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected.

Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

80261

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000

Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a

good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform **19%** of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:

<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

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

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.
 - (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
 - (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.
 - (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

- (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
 - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.
- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
 - (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
 - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
 - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the

bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

- (c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
 - (1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
 - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement.
- (e) DBE as a material supplier:
 - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
 - (2) 100 percent goal credit for the cost of materials or supplies obtained from a DBE manufacturer.
 - (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DB.E.UP@illinois.gov.
- (b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.
- (c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.
- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:
- (1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
 - (2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
 - (3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.

- (6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

- (f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be

made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

80029

HOT-MIX ASPHALT (BDE)

Effective: January 1, 2024

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

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

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

“When establishing the target density, the HMA maximum theoretical specific gravity (G_{mm}) will be the Department mix design verification test result.”

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

“Production is not required to stop after a test strip has been constructed.”

80456

HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT (BDE)

Effective: November 1, 2022

Revised: August 1, 2023

Add the following after the second sentence in the eighth paragraph of Article 406.06(h)(2) of the Standard Specifications:

“If rain is forecasted and traffic is to be on the LJS or if pickup/tracking of the LJS material is likely, the LJS shall be covered immediately following its application with FA 20 fine aggregate mechanically spread uniformly at a rate of 1.5 ± 0.5 lb/sq yd (0.75 ± 0.25 kg/sq m). Fine aggregate landing outside of the LJS shall be removed prior to application of tack coat.”

Add the following after the first sentence in the ninth paragraph of Article 406.06(h)(2) of the Standard Specifications:

“LJS half-width shall be applied at a width of 9 ± 1 in. (225 ± 25 mm) in the immediate lane to be placed with the outside edge flush with the joint of the next HMA lift. The vertical face of any longitudinal joint remaining in place shall also be coated.”

Add the following after the eleventh paragraph of Article 406.06(h)(2) of the Standard Specifications:

“LJS Half-Width Application Rate, lb/ft (kg/m) ^{1/}			
Lift Thickness, in. (mm)	Coarse Graded Mixture (IL-19.0, IL-19.0L, IL-9.5, IL-9.5L, IL-4.75)	Fine Graded Mixture (IL-9.5FG)	SMA Mixture (SMA-9.5, SMA-12.5)
$\frac{3}{4}$ (19)	0.44 (0.66)		
1 (25)	0.58 (0.86)		
1 $\frac{1}{4}$ (32)	0.66 (0.98)	0.44 (0.66)	
1 $\frac{1}{2}$ (38)	0.74 (1.10)	0.48 (0.71)	0.63 (0.94)
1 $\frac{3}{4}$ (44)	0.82 (1.22)	0.52 (0.77)	0.69 (1.03)
2 (50)	0.90 (1.34)	0.56 (0.83)	0.76 (1.13)
$\geq 2 \frac{1}{4}$ (60)	0.98 (1.46)		

1/ The application rate includes a surface demand for liquid. The thickness of the LJS may taper from the center of the application to a lesser thickness on the edge of the application, provided the correct width and application rate are maintained.”

Revise the second paragraph of Article 406.13(b) of the Standard Specifications to read:

“Aggregate for covering tack, LJS, or FLS will not be measured for payment.”

Add the following to the end of the second paragraph of Article 406.14 of the Standard Specifications:

“Longitudinal joint sealant (LJS) half-width will be paid for at the contract unit price per foot (meter) for LONGITUDINAL JOINT SEALANT, HALF-WIDTH.”

80446

PERFORMANCE GRADED ASPHALT BINDER (BDE)

Effective: January 1, 2023

Revise Article 1032.05 of the Standard Specifications to read:

“1032.05 Performance Graded Asphalt Binder. These materials will be accepted according to the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.” The Department will maintain a qualified producer list. These materials shall be free from water and shall not foam when heated to any temperature below the actual flash point. Air blown asphalt, recycle engine oil bottoms (ReOB), and polyphosphoric acid (PPA) modification shall not be used.

When requested, producers shall provide the Engineer with viscosity/temperature relationships for the performance graded asphalt binders delivered and incorporated in the work.

- (a) Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans and the following.

Test	Parameter
Small Strain Parameter (AASHTO PP 113) BBR, ΔT_c , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5 °C min.

- (b) Modified Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans.

Asphalt binder modification shall be performed at the source, as defined in the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.”

Modified asphalt binder shall be safe to handle at asphalt binder production and storage temperatures or HMA construction temperatures. Safety Data Sheets (SDS) shall be provided for all asphalt modifiers.

- (1) Polymer Modification (SB/SBS or SBR). Elastomers shall be added to the base asphalt binder to achieve the specified performance grade and shall be either a styrene-butadiene diblock, triblock copolymer without oil extension, or a styrene-butadiene rubber. The polymer modified asphalt binder shall be smooth, homogeneous, and be according to the requirements shown in Table 1 or 2 for the grade shown on the plans.

Table 1 - Requirements for Styrene-Butadiene Copolymer (SB/SBS) Modified Asphalt Binders		
Test	Asphalt Grade SB/SBS PG 64-28 SB/SBS PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SB/SBS PG 76-22 SB/SBS PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

Table 2 - Requirements for Styrene-Butadiene Rubber (SBR) Modified Asphalt Binders		
Test	Asphalt Grade SBR PG 64-28 SBR PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SBR PG 76-22 SBR PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
Toughness ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	110 (12.5) min.	110 (12.5) min.
Tenacity ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	75 (8.5) min.	75 (8.5) min.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	40 min.	50 min.

- (2) Ground Tire Rubber (GTR) Modification. GTR modification is the addition of recycled ground tire rubber to liquid asphalt binder to achieve the specified performance grade. GTR shall be produced from processing automobile and/or truck tires by the ambient

grinding method or micronizing through a cryogenic process. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall not contain free metal particles, moisture that would cause foaming of the asphalt, or other foreign materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois Modified AASHTO T 27 “Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates” or AASHTO PP 74 “Standard Practice for Determination of Size and Shape of Glass Beads Used in Traffic Markings by Means of Computerized Optical Method”, a 50 g sample of the GTR shall conform to the following gradation requirements.

Sieve Size	Percent Passing
No. 16 (1.18 mm)	100
No. 30 (600 µm)	95 ± 5
No. 50 (300 µm)	> 20

GTR modified asphalt binder shall be tested for rotational viscosity according to AASHTO T 316 using spindle S27. GTR modified asphalt binder shall be tested for original dynamic shear and RTFO dynamic shear according to AASHTO T 315 using a gap of 2 mm.

The GTR modified asphalt binder shall meet the requirements of Table 3.

Table 3 - Requirements for Ground Tire Rubber (GTR) Modified Asphalt Binders		
Test	Asphalt Grade GTR PG 64-28 GTR PG 70-22	Asphalt Grade GTR PG 76-22 GTR PG 76-28 GTR PG 70-28
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

- (3) Softener Modification (SM). Softener modification is the addition of organic compounds, such as engineered flux, bio-oil blends, modified vegetable oils, glycol amines, and fatty acid derivatives, to the base asphalt binder to achieve the specified performance grade. Softeners shall be dissolved, dispersed, or reacted in the asphalt binder to enhance its performance and shall remain compatible with the asphalt binder with no separation. Softeners shall not be added to modified PG asphalt binder as defined in Articles 1032.05(b)(1) or 1032.05(b)(2).

An Attenuated Total Reflectance-Fourier Transform Infrared spectrum (ATR-FTIR) shall be collected for both the softening compound as well as the softener modified

asphalt binder at the dose intended for qualification. The ATR-FTIR spectra shall be collected on unaged softener modified binder, 20-hour Pressurized Aging Vessel (PAV) aged softener modified binder, and 40-hour PAV aged softener modified binder. The ATR-FTIR shall be collected in accordance with Illinois Test Procedure 601. The electronic files spectral files (in one of the following extensions or equivalent: *.SPA, *.SPG, *.IRD, *.IFG, *.CSV, *.SP, *.IRS, *.GAML, *. [0-9], *.IGM, *.ABS, *.DRT, *.SBM, *.RAS) shall be submitted to the Central Bureau of Materials.

Softener modified asphalt binders shall meet the requirements in Table 4.

Test	Asphalt Grade	
	SM PG 46-28	SM PG 46-34
	SM PG 52-28	SM PG 52-34
	SM PG 58-22	SM PG 58-28
	SM PG 64-22	
Small Strain Parameter (AASHTO PP 113) BBR, ΔT_c , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5°C min.	
Large Strain Parameter (Illinois Modified AASHTO T 391) DSR/LAS Fatigue Property, $\Delta G^* _{peak}$, 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	≥ 54 %	

The following grades may be specified as tack coats.

Asphalt Grade	Use
PG 58-22, PG 58-28, PG 64-22	Tack Coat

Revise Article 1031.06(c)(1) and 1031.06(c)(2) of the Standard Specifications to read:

“(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin ABR shall not exceed the amounts listed in the following table.

Ndesign	Binder	Surface	Polymer Modified Binder or Surface ^{3/}
30	30	30	10
50	25	15	10
70	15	10	10
90	10	10	10

1/ For Low ESAL HMA shoulder and stabilized subbase, the RAP/RAS ABR shall not exceed 50 percent of the mixture.

- 2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).
 - 3/ The maximum ABR percentages for ground tire rubber (GTR) modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.
- (2) FRAP/RAS. When FRAP is used alone or FRAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the following table.

HMA Mixtures - FRAP/RAS Maximum ABR % ^{1/2/}			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface ^{3/}
30	55	45	15
50	45	40	15
70	45	35	15
90	45	35	15
SMA	--	--	25
IL-4.75	--	--	35

- 1/ For Low ESAL HMA shoulder and stabilized subbase, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.
- 2/ When FRAP/RAS ABR exceeds 20 percent for all mixes, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).
- 3/ The maximum ABR percentages for GTR modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.”

Add the following to the end of Note 2 of Article 1030.03 of the Standard Specifications.

“A dedicated storage tank for the ground tire rubber (GTR) modified asphalt binder shall be provided. This tank shall be capable of providing continuous mechanical mixing throughout and/or recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ±0.40 percent.”

PORTLAND CEMENT CONCRETE (BDE)

Effective: August 1, 2023

Revise the second paragraph of Article 1103.03(a)(4) the Standard Specifications to read:

“The dispenser system shall provide a visual indication that the liquid admixture is actually entering the batch, such as via a transparent or translucent section of tubing or by independent check with an integrated secondary metering device. If approved by the Engineer, an alternate indicator may be used for admixtures dosed at rates of 25 oz/cwt (1630 mL/100 kg) or greater, such as accelerating admixtures, corrosion inhibitors, and viscosity modifying admixtures.”

80451

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2024

Revised: April 1, 2024

Revise the first paragraph of Article 669.04 of the Standard Specifications to read:

“669.04 Regulated Substances Monitoring. Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities. The excavated soil and groundwater within the work areas shall be managed as either uncontaminated soil, hazardous waste, special waste, or non-special waste.

As part of the regulated substances monitoring, the monitoring personnel shall perform and document the applicable duties listed on form BDE 2732 “Regulated Substances Monitoring Daily Record (RSM DR)”.

Revise the first two sentences of the nineteenth paragraph of Article 669.05 of the Standard Specifications to read:

“The Contractor shall coordinate waste disposal approvals with the disposal facility and provide the specific analytical testing requirements of that facility. The Contractor shall make all arrangements for collection, transportation, and analysis of landfill acceptance testing.”

Revise the last paragraph of Article 669.05 of the Standard Specifications to read:

“The Contractor shall select a permitted landfill facility or CCDD/USFO facility meeting the requirements of 35 Ill. Admin. Code Parts 810-814 or Part 1100, respectively. The Department will review and approve or reject the facility proposed by the Contractor based upon information provided in BDE 2730. The Contractor shall verify whether the selected facility is compliant with those applicable standards as mandated by their permit and whether the facility is presently, has previously been, or has never been, on the United States Environmental Protection Agency (U.S. EPA) National Priorities List or the Resource Conservation and Recovery Act (RCRA) List of Violating Facilities. The use of a Contractor selected facility shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth.”

Revise the first paragraph of Article 669.07 of the Standard Specifications to read:

“669.07 Temporary Staging. Soil classified according to Articles 669.05(a)(2), (b)(1), or (c) may be temporarily staged at the Contractor's option. All other soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) shall be managed and disposed of without temporary staging to the greatest extent practicable. If circumstances beyond the Contractor's control require temporary staging of these latter materials, the Contractor shall request approval from the Engineer in writing.

Topsoil for re-use as final cover which has been field screened and found not to exhibit PID readings over daily background readings as documented on the BDE 2732, visual staining or

odors, and is classified according to Articles 669.05(a)(2), (a)(3), (a)(4), (b)(1), or (c) may be temporarily staged at the Contractor's option."

Add the following paragraph after the sixth paragraph of Article 669.11 of the Standard Specifications.

"The sampling and testing of effluent water derived from dewatering discharges for priority pollutants volatile organic compounds (VOCs), priority pollutants semi-volatile organic compounds (SVOCs), or priority pollutants metals, will be paid for at the contract unit price per each for VOCS GROUNDWATER ANALYSIS using EPA Method 8260B, SVOCs GROUNDWATER ANALYSIS using EPA Method 8270C, or RCRA METALS GROUNDWATER ANALYSIS using EPA Methods 6010B and 7471A. This price shall include transporting the sample from the job site to the laboratory."

Revise the first sentence of the eight paragraph of Article 669.11 of the Standard Specifications to read:

"Payment for temporary staging of soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) to be managed and disposed of, if required and approved by the Engineer, will be paid according to Article 109.04."

80455

SEEDING (BDE)

Effective: November 1, 2022

Revise Article 250.07 of the Standard Specifications to read:

“250.07 Seeding Mixtures. The classes of seeding mixtures and combinations of mixtures will be designated in the plans.

When an area is to be seeded with two or more seeding classes, those mixtures shall be applied separately on the designated area within a seven day period. Seeding shall occur prior to placement of mulch cover. A Class 7 mixture can be applied at any time prior to applying any seeding class or added to them and applied at the same time.

TABLE 1 - SEEDING MIXTURES		
Class - Type	Seeds	lb/acre (kg/hectare)
1 Lawn Mixture 1/	Kentucky Bluegrass	100 (110)
	Perennial Ryegrass	60 (70)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	40 (50)
1A Salt Tolerant Lawn Mixture 1/	Kentucky Bluegrass	60 (70)
	Perennial Ryegrass	20 (20)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	20 (20)
	<i>Festuca brevipila</i> (Hard Fescue)	20 (20)
	<i>Puccinellia distans</i> (Fults Saltgrass or Salty Alkaligrass)	60 (70)
1B Low Maintenance Lawn Mixture 1/	Turf-Type Fine Fescue 3/	150 (170)
	Perennial Ryegrass	20 (20)
	Red Top	10 (10)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	20 (20)
2 Roadside Mixture 1/	<i>Lolium arundinaceum</i> (Tall Fescue)	100 (110)
	Perennial Ryegrass	50 (55)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	40 (50)
	Red Top	10 (10)
2A Salt Tolerant Roadside Mixture 1/	<i>Lolium arundinaceum</i> (Tall Fescue)	60 (70)
	Perennial Ryegrass	20 (20)
	<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	30 (20)
	<i>Festuca brevipila</i> (Hard Fescue)	30 (20)
	<i>Puccinellia distans</i> (Fults Saltgrass or Salty Alkaligrass)	60 (70)
3 Northern Illinois Slope Mixture 1/	<i>Elymus canadensis</i> (Canada Wild Rye) 5/	5 (5)
	Perennial Ryegrass	20 (20)
	Alsike Clover 4/	5 (5)
	<i>Desmanthus illinoensis</i> (Illinois Bundleflower) 4/ 5/	2 (2)
	<i>Schizachyrium scoparium</i> (Little Bluestem) 5/	12 (12)
	<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/	10 (10)
	<i>Puccinellia distans</i> (Fults Saltgrass or Salty Alkaligrass)	30 (35)
	Oats, Spring	50 (55)
	Slender Wheat Grass 5/	15 (15)
	Buffalo Grass 5/ 7/	5 (5)
	3A Southern Illinois Slope Mixture 1/	Perennial Ryegrass
<i>Elymus canadensis</i> (Canada Wild Rye) 5/		20 (20)
<i>Panicum virgatum</i> (Switchgrass) 5/		10 (10)
<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/		12 (12)
<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/		10 (10)
<i>Dalea candida</i> (White Prairie Clover) 4/ 5/		5 (5)
<i>Rudbeckia hirta</i> (Black-Eyed Susan) 5/		5 (5)
Oats, Spring		50 (55)

Class – Type	Seeds	lb/acre (kg/hectare)
4 Native Grass 2/ 6/	<i>Andropogon gerardi</i> (Big Blue Stem) 5/	4 (4)
	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/	5 (5)
	<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/	5 (5)
	<i>Elymus canadensis</i> (Canada Wild Rye) 5/	1 (1)
	<i>Panicum virgatum</i> (Switch Grass) 5/	1 (1)
	<i>Sorghastrum nutans</i> (Indian Grass) 5/	2 (2)
	Annual Ryegrass	25 (25)
	Oats, Spring	25 (25)
	Perennial Ryegrass	15 (15)
	4A Low Profile Native Grass 2/ 6/	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/
<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/		5 (5)
<i>Elymus canadensis</i> (Canada Wild Rye) 5/		1 (1)
<i>Sporobolus heterolepis</i> (Prairie Dropseed) 5/		0.5 (0.5)
Annual Ryegrass		25 (25)
Oats, Spring		25 (25)
Perennial Ryegrass		15 (15)
4B Wetland Grass and Sedge Mixture 2/ 6/	Annual Ryegrass	25 (25)
	Oats, Spring	25 (25)
	Wetland Grasses (species below) 5/	6 (6)
<u>Species:</u>		<u>% By Weight</u>
<i>Calamagrostis canadensis</i> (Blue Joint Grass)		12
<i>Carex lacustris</i> (Lake-Bank Sedge)		6
<i>Carex slipata</i> (Awl-Fruited Sedge)		6
<i>Carex stricta</i> (Tussock Sedge)		6
<i>Carex vulpinoidea</i> (Fox Sedge)		6
<i>Eleocharis acicularis</i> (Needle Spike Rush)		3
<i>Eleocharis obtusa</i> (Blunt Spike Rush)		3
<i>Glyceria striata</i> (Fowl Manna Grass)		14
<i>Juncus effusus</i> (Common Rush)		6
<i>Juncus tenuis</i> (Slender Rush)		6
<i>Juncus torreyi</i> (Torrey's Rush)		6
<i>Leersia oryzoides</i> (Rice Cut Grass)		10
<i>Scirpus acutus</i> (Hard-Stemmed Bulrush)		3
<i>Scirpus atrovirens</i> (Dark Green Rush)		3
<i>Bolboschoenus fluviatilis</i> (River Bulrush)		3
<i>Schoenoplectus tabernaemontani</i> (Softstem Bulrush)		3
<i>Spartina pectinata</i> (Cord Grass)		4

Class – Type	Seeds	lb/acre (kg/hectare)
5	Forb with Annuals Mixture 2/ 5/ 6/	Annuals Mixture (Below) Forb Mixture (Below)
		1 (1) 10 (10)
	Annuals Mixture - Mixture not exceeding 25 % by weight of any one species, of the following:	
	<i>Coreopsis lanceolata</i> (Sand Coreopsis) <i>Leucanthemum maximum</i> (Shasta Daisy) <i>Gaillardia pulchella</i> (Blanket Flower) <i>Ratibida columnifera</i> (Prairie Coneflower) <i>Rudbeckia hirta</i> (Black-Eyed Susan)	
	Forb Mixture - Mixture not exceeding 5 % by weight PLS of any one species, of the following:	
	<i>Amorpha canescens</i> (Lead Plant) 4/ <i>Anemone cylindrica</i> (Thimble Weed) <i>Asclepias tuberosa</i> (Butterfly Weed) <i>Aster azureus</i> (Sky Blue Aster) <i>Symphotrichum leave</i> (Smooth Aster) <i>Aster novae-angliae</i> (New England Aster) <i>Baptisia leucantha</i> (White Wild Indigo) 4/ <i>Coreopsis palmata</i> (Prairie Coreopsis) <i>Echinacea pallida</i> (Pale Purple Coneflower) <i>Eryngium yuccifolium</i> (Rattlesnake Master) <i>Helianthus mollis</i> (Downy Sunflower) <i>Heliopsis helianthoides</i> (Ox-Eye) <i>Liatris aspera</i> (Rough Blazing Star) <i>Liatris pycnostachya</i> (Prairie Blazing Star) <i>Monarda fistulosa</i> (Prairie Bergamot) <i>Parthenium integrifolium</i> (Wild Quinine) <i>Dalea candida</i> (White Prairie Clover) 4/ <i>Dalea purpurea</i> (Purple Prairie Clover) 4/ <i>Physostegia virginiana</i> (False Dragonhead) <i>Potentilla arguta</i> (Prairie Cinquefoil) <i>Ratibida pinnata</i> (Yellow Coneflower) <i>Rudbeckia subtomentosa</i> (Fragrant Coneflower) <i>Silphium laciniatum</i> (Compass Plant) <i>Silphium terebinthinaceum</i> (Prairie Dock) <i>Oligoneuron rigidum</i> (Rigid Goldenrod) <i>Tradescantia ohiensis</i> (Spiderwort) <i>Veronicastrum virginicum</i> (Culver's Root)	

Class – Type	Seeds	lb/acre (kg/hectare)
5A Large Flower Native Forb Mixture 2/ 5/ 6/	Forb Mixture (see below)	5 (5)
	<u>Species:</u>	<u>% By Weight</u>
	<i>Aster novae-angliae</i> (New England Aster)	5
	<i>Echinacea pallida</i> (Pale Purple Coneflower)	10
	<i>Helianthus mollis</i> (Downy Sunflower)	10
	<i>Heliopsis helianthoides</i> (Ox-Eye)	10
	<i>Liatris pycnostachya</i> (Prairie Blazing Star)	10
	<i>Ratibida pinnata</i> (Yellow Coneflower)	5
	<i>Rudbeckia hirta</i> (Black-Eyed Susan)	10
	<i>Silphium laciniatum</i> (Compass Plant)	10
	<i>Silphium terebinthinaceum</i> (Prairie Dock)	20
	<i>Oligoneuron rigidum</i> (Rigid Goldenrod)	10
5B Wetland Forb 2/ 5/ 6/	Forb Mixture (see below)	2 (2)
	<u>Species:</u>	<u>% By Weight</u>
	<i>Acorus calamus</i> (Sweet Flag)	3
	<i>Angelica atropurpurea</i> (Angelica)	6
	<i>Asclepias incarnata</i> (Swamp Milkweed)	2
	<i>Aster puniceus</i> (Purple Stemmed Aster)	10
	<i>Bidens cernua</i> (Beggarticks)	7
	<i>Eutrochium maculatum</i> (Spotted Joe Pye Weed)	7
	<i>Eupatorium perfoliatum</i> (Boneset)	7
	<i>Helenium autumnale</i> (Autumn Sneezeweed)	2
	<i>Iris virginica shrevei</i> (Blue Flag Iris)	2
	<i>Lobelia cardinalis</i> (Cardinal Flower)	5
	<i>Lobelia siphilitica</i> (Great Blue Lobelia)	5
	<i>Lythrum alatum</i> (Winged Loosestrife)	2
	<i>Physostegia virginiana</i> (False Dragonhead)	5
	<i>Persicaria pensylvanica</i> (Pennsylvania Smartweed)	10
	<i>Persicaria lapathifolia</i> (Curlytop Knotweed)	10
	<i>Pycnanthemum virginianum</i> (Mountain Mint)	5
	<i>Rudbeckia laciniata</i> (Cut-leaf Coneflower)	5
	<i>Oligoneuron riddellii</i> (Riddell Goldenrod)	2
	<i>Sparganium eurycarpum</i> (Giant Burreed)	5
6 Conservation Mixture 2/ 6/	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/ <i>Elymus canadensis</i> (Canada Wild Rye) 5/ Buffalo Grass 5/ 7/ Vernal Alfalfa 4/ Oats, Spring	5 (5) 2 (2) 5 (5) 15 (15) 48 (55)
6A Salt Tolerant Conservation Mixture 2/ 6/	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/ <i>Elymus canadensis</i> (Canada Wild Rye) 5/ Buffalo Grass 5/ 7/ Vernal Alfalfa 4/ Oats, Spring <i>Puccinellia distans</i> (Fulfs Saltgrass or Salty Alkaligrass)	5 (5) 2 (2) 5 (5) 15 (15) 48 (55) 20 (20)
7 Temporary Turf Cover Mixture	Perennial Ryegrass Oats, Spring	50 (55) 64 (70)

Notes:

- 1/ Seeding shall be performed when the ambient temperature has been between 45 °F (7 °C) and 80 °F (27 °C) for a minimum of seven (7) consecutive days and is forecasted to be the same for the next five (5) days according to the National Weather Service.
- 2/ Seeding shall be performed in late fall through spring beginning when the ambient temperature has been below 45 °F (7 °C) for a minimum of seven (7) consecutive days and ending when the ambient temperature exceeds 80 °F (27 °C) according to the National Weather Service.
- 3/ Specific variety as shown in the plans or approved by the Engineer.
- 4/ Inoculation required.
- 5/ Pure Live Seed (PLS) shall be used.
- 6/ Fertilizer shall not be used.
- 7/ Seed shall be primed with KNO_3 to break dormancy and dyed to indicate such.

Seeding will be inspected after a period of establishment. The period of establishment shall be six (6) months minimum, but not to exceed nine (9) months. After the period of establishment, areas not exhibiting 75 percent uniform growth shall be interseeded or reseeded, as determined by the Engineer, at no additional cost to the Department.”

80445

SHORT TERM AND TEMPORARY PAVEMENT MARKINGS (BDE)

Effective: April 1, 2024

Revised: April 2, 2024

Revise Article 701.02(d) of the Standard Specifications to read:

“(d) Pavement Marking Tapes (Note 3) 1095.06”

Add the following Note to the end of Article 701.02 of the Standard Specifications:

“Note 3. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape.”

Revise Article 703.02(c) of the Standard Specifications to read:

“(c) Pavement Marking Tapes (Note 1) 1095.06”

Add the following Note to the end of Article 703.02 of the Standard Specifications:

“Note 1. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape.”

Revise Article 1095.06 of the Standard Specifications to read:

“1095.06 Pavement Marking Tapes. Type I white or yellow marking tape shall consist of glass spheres embedded into a binder on a foil backing that is precoated with a pressure sensitive adhesive. The spheres shall be of uniform gradation and distributed evenly over the surface of the tape.

Type IV tape shall consist of white or yellow tape with wet reflective media incorporated to provide immediate and continuing retroreflection in wet and dry conditions. The wet retroreflective media shall be bonded to a durable polyurethane surface. The patterned surface shall have approximately 40 ± 10 percent of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed reflective elements or particles.

Blackout tape shall consist of a matte black, non-reflective, patterned surface that is precoated with a pressure sensitive adhesive.

- (a) Color. The white and yellow markings shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

Color	Daylight Reflectance %Y
White	65 min.
Yellow *	36 - 59

*Shall match Aerospace Material Specification Standard 595 33538 (Orange Yellow) and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

- (b) Retroreflectivity. The white and yellow markings shall be retroreflective. Reflective values measured in accordance with the photometric testing procedure of ASTM D 4061 shall not be less than those listed in the table below. The coefficient of retroreflected luminance, R_L , shall be expressed as average millicandelas/footcandle/sq ft (millicandelas/lux/sq m), measured on a 3.0 x 0.5 ft (900 mm x 150 mm) panel at 86 degree entrance angle.

Coefficient of Retroreflected Luminance, R_L , Dry					
Type I			Type IV		
Observation Angle	White	Yellow	Observation Angle	White	Yellow
0.2°	2700	2400	0.2°	1300	1200
0.5°	2250	2000	0.5°	1100	1000

Wet retroreflectance shall be measured for Type IV under wet conditions according to ASTM E 2177 and meet the following.

Wet Retroreflectance, Initial R_L	
Color	R_L 1.05/88.76
White	300
Yellow	200

- (c) Skid Resistance. The surface of Type IV and blackout markings shall provide a minimum skid resistance of 45 BPN when tested according to ASTM E 303.
- (d) Application. The pavement marking tape shall have a precoated pressure sensitive adhesive and shall require no activation procedures. Test pieces of the tape shall be applied according to the manufacturer's instructions and tested according to ASTM D 1000, Method A, except that a stiff, short bristle roller brush and heavy hand pressure will be substituted for the weighted rubber roller in applying the test pieces to the metal test panel. Material tested as directed above shall show a minimum adhesion value of 750 g/in. (30 g/mm) width at the temperatures specified in ASTM D 1000. The adhesive shall be resistant to oils, acids, solvents, and water, and shall not leave objectionable stains or residue after removal. The material shall be flexible and conformable to the texture of the pavement.

(e) Durability. Type IV and blackout tape shall be capable of performing for the duration of a normal construction season and shall then be capable of being removed intact or in large sections at pavement temperatures above 40 °F (4 °C) either manually or with a roll-up device without the use of sandblasting, solvents, or grinding. The Contractor shall provide a manufacturer's certification that the material meets the requirements for being removed after the following minimum traffic exposure based on transverse test decks with rolling traffic.

- (1) Time in place - 400 days
- (2) ADT per lane - 9,000 (28 percent trucks)
- (3) Axle hits - 10,000,000 minimum

Samples of the material applied to standard specimen plates will be measured for thickness and tested for durability in accordance with ASTM D 4060, using a CS-17 wheel and 1000-gram load, and shall meet the following criteria showing no significant change in color after being tested for the number of cycles indicated.

Test	Type I	Type IV	Blackout
Minimum Initial Thickness, mils (mm)	20 (0.51)	65 (1.65) ^{1/} 20 (0.51) ^{2/}	65 (1.65) ^{1/} 20 (0.51) ^{2/}
Durability (cycles)	5,000	1,500	1,500

1/ Measured at the thickest point of the patterned surface.

2/ Measured at the thinnest point of the patterned surface.

The pavement marking tape, when applied according to the manufacturer's recommended procedures, shall be weather resistant and shall show no appreciable fading, lifting, or shrinkage during the useful life of the marking. The tape, as applied, shall be of good appearance, free of cracks, and edges shall be true, straight, and unbroken.

(f) Sampling and Inspection.

(1) Sample. Prior to approval and use of Type IV pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The independent laboratory test report shall state the lot tested, the manufacturer's name, and the date of manufacture.

After initial approval by the Department, samples and certification by the manufacturer shall be submitted for each subsequent batch of Type IV tape used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, the manufacturer's name, and the date of manufacture.

- (2) Inspection. The Contractor shall provide a manufacturer's certification to the Engineer stating the material meets all requirements of this specification. All material samples for acceptance tests shall be taken or witnessed by a representative of the Bureau of Materials and shall be submitted to the Engineer of Materials, 126 East Ash Street, Springfield, Illinois 62704-4766 at least 30 days in advance of the pavement marking operations."

80457

SOURCE OF SUPPLY AND QUALITY REQUIREMENTS (BDE)

Effective: January 2, 2023

Add the following to Article 106.01 of the Standard Specifications:

“The final manufacturing process for construction materials and the immediately preceding manufacturing stage for construction materials shall occur within the United States. Construction materials shall include an article, material, or supply that is or consists primarily of the following.

- (a) Non-ferrous metals;
- (b) Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- (c) Glass (including optic glass);
- (d) Lumber;
- (e) Drywall.

Items consisting of two or more of the listed construction materials that have been combined through a manufacturing process, and items including at least one of the listed materials combined with a material that is not listed through a manufacturing process shall be exempt.”

80448

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

“109.14 Subcontractor and Disadvantaged Business Enterprise Payment Reporting.
The Contractor shall report all payments made to the following parties:

- (a) first tier subcontractors;
- (b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;
- (c) material suppliers or trucking firms that are part of the Contractor’s submitted DBE utilization plan.

The report shall be made through the Department’s on-line subcontractor payment reporting system within 21 days of making the payment.”

80397

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017

Revised: April 1, 2019

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

“This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor’s work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%”

80391

SUBMISSION OF PAYROLL RECORDS (BDE)

Effective: April 1, 2021

Revised: November 2, 2023

FEDERAL AID CONTRACTS. Revise the following section of Check Sheet #1 of the Recurring Special Provisions to read:

“STATEMENTS AND PAYROLLS

The payroll records shall include the worker’s name, social security number, last known address, telephone number, email address, classification(s) of work actually performed, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof), daily and weekly number of hours actually worked in total, deductions made, and actual wages paid.

The Contractor and each subcontractor shall submit certified payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers, last known addresses, telephone numbers, and email addresses shall not be included on weekly submittals. Instead, the payrolls need only include an identification number for each employee (e.g., the last four digits of the employee’s social security number). The submittals shall be made using LCPTracker Pro software. The software is web-based and can be accessed at <https://lcptracker.com/>. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option (“No Work”, “Suspended”, or “Complete”) selected.”

STATE CONTRACTS. Revise Item 3 of Section IV of Check Sheet #5 of the Recurring Special Provisions to read:

- “3. Submission of Payroll Records. The Contractor and each subcontractor shall, no later than the 15th day of each calendar month, file a certified payroll for the immediately preceding month to the Illinois Department of Labor (IDOL) through the Illinois Prevailing Wage Portal in compliance with the State Prevailing Wage Act (820 ILCS 130). The portal can be found on the IDOL website at <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Prevailing-Wage-Portal.aspx>. Payrolls shall be submitted in the format prescribed by the IDOL.

In addition to filing certified payroll(s) with the IDOL, the Contractor and each subcontractor shall certify and submit payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers shall not be included on weekly submittals. Instead, the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee’s social security number). In addition, starting and ending times of work each day may be omitted from the payroll records submitted. The submittals shall be made using LCPTracker Pro software. The software is web-based and can be accessed at <https://lcptracker.com/>.

When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option (“No Work”, “Suspended”, or “Complete”) selected.”

80437

TRAINING SPECIAL PROVISIONS (BDE)

Effective: October 15, 1975
Revised: September 2, 2021

This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 2. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also ensure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee it employs on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he or she has successfully completed a training course leading to journeyman status or in which he or she has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor Employment Training Administration shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the Contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The Contractor shall provide for the maintenance of records and furnish periodic reports documenting its performance under this Training Special Provision.

For contracts with an awarded contract value of \$500,000 or more, the Contractor is required to comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules to the extent permitted by Section 20-20(g). For federally funded projects, the number of trainees to be trained under this contract, as stated in the Training Special Provisions, will be the established goal for the Illinois Works Apprenticeship Initiative 30 ILCS 559/20-20(g). The Contractor shall make a good faith effort to meet this goal. For federally funded projects, the Illinois Works Apprenticeship Initiative will be implemented using the FHWA approved OJT procedures. The Contractor must comply with the recordkeeping and reporting obligations of the Illinois Works Apprenticeship Initiative for the life of the project, including the certification as to whether the trainee/apprentice labor hour goals were met.

Method of Measurement. The unit of measurement is in hours.

Basis of Payment. This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price, and total price have been included in the schedule of prices.

20338

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021

Revised: November 1, 2022

Add the following paragraph after the first paragraph of Article 701.08 of the Standard Specifications:

“The Contractor shall equip all vehicles and equipment with high-intensity oscillating, rotating, or flashing, amber or amber-and-white, warning lights which are visible from all directions. In accordance with 625 ILCS 5/12-215, the lights may only be in operation while the vehicle or equipment is engaged in construction operations.”

80439

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

Revised: November 1, 2021

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Sunday through Saturday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

80302

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

“(q) Temporary Sign Supports 1106.02”

Revise the third paragraph of Article 701.14 of the Standard Specifications to read:

“For temporary sign supports, the Contractor shall provide a FHWA eligibility letter for each device used on the contract. The letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support per the manufacturer’s specifications.”

Revise the first paragraph of Article 701.15 of the Standard Specifications to read:

“**701.15 Traffic Control Devices.** For devices that must meet crashworthiness standards, the Contractor shall provide a manufacturer’s self-certification or a FHWA eligibility letter for each Category 1 device and a FHWA eligibility letter for each Category 2 and Category 3 device used on the contract. The self-certification or letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device.”

Revise the first six paragraphs of Article 1106.02 of the Standard Specifications to read:

“**1106.02 Devices.** Work zone traffic control devices and combinations of devices shall meet crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 1 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 2 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact

attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2029. Category 3 devices shall be crash tested for Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. It is preferable for Category 4 devices manufactured after December 31, 2019 to be MASH-16 compliant; however, there are currently no crash tested devices in this category, so it remains exempt from the NCHRP 350 or MASH compliance requirement.

For each type of device, when no more than one MASH-16 compliant is available, an NCHRP 350 or MASH-2009 compliant device may be used, even if manufactured after December 31, 2019.”

Revise Articles 1106.02(g), 1106.02(k), and 1106.02(l) to read:

“(g) Truck Mounted/Trailer Mounted Attenuators. The attenuator shall be approved for use at Test Level 3. Test Level 2 may be used for normal posted speeds less than or equal to 45 mph.

(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast and be on the Department’s qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.

(l) Movable Traffic Barrier. The movable traffic barrier shall be on the Department’s qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis.”

80427

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants /

Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA- 1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act ([29 CFR part 3](#))), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.*

Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901–3907](#).

3. Records and certified payrolls (29 CFR 5.5)

a. Basic record requirements (1) Length of record retention. All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) Information required. Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) Additional records relating to fringe benefits. Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) Additional records relating to apprenticeship. Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. Certified payroll requirements (1) Frequency and method of submission. The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) Information required. The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHDLegacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) Statement of Compliance. Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in [29 CFR part 3](#); and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) Use of Optional Form WH-347. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature*. The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification*. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention*. The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents*. The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers*. The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements*. If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures*. Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay*. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits*. Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio*. The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates*. Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity*. The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;

- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and

health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or

cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY
SYSTEM OR APPALACHIAN LOCAL ACCESS**

ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.