INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2020

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

ERRATA Standard Specifications for Road and Bridge Construction
(Adopted 4-1-16) (Revised 1-1-20)

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LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

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BDE SPECIAL PROVISIONS
For the July 31, 2020 and September 18, 2020 Lettings

The following special provisions indicated by a "check mark" are applicable to this contract and will be included by the Project Coordination and Implementation Section of the BD&E. An * indicates a new or revised special provision for the letting.

	File Name	#		Special Provision Title	Effective	Revised
	80099	1	☒	Accessible Pedestrian Signals (APS)	April 1, 2003	April 1, 2020
	80274	2	☒	Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
	80192	3	☐	Automated Flagger Assistance Device	Jan. 1, 2008	
	80173	4	☒	Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
	80426	5	☐	Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	
	80241	6	☐	Bridge Demolition Debris	July 1, 2009	
	5026I	7	☐	Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5048I	8	☐	Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5049I	9	☒	Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5053I	10	☒	Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
*	80425	11	☐	Cape Seal	Jan. 1, 2020	Jan 1, 2021
	80384	12	☒	Compensable Delay Costs	June 2, 2017	April 1, 2019
	80198	13	☐	Completion Date (via calendar days)	April 1, 2008	
	80199	14	☐	Completion Date (via calendar days) Plus Working Days	April 1, 2008	
	80293	15	☐	Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
	80311	16	☒	Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
	80261	17	☐	Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
	80387	18	☐	Contrast Preformed Plastic Pavement Marking	Nov. 1, 2017	
*	80434	19	☐	Corrugated Plastic Pipe (Culvert and Storm Sewer)	Jan 1, 2021	
	80029	20	☒	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	March 2, 2019
	80402	21	☒	Disposal Fees	Nov. 1, 2018	
	80378	22	☒	Dowel Bar Inserter	Jan. 1, 2017	Jan. 1, 2018
	80421	23	☒	Electric Service Installation	Jan. 1, 2020	
	80415	24	☒	Emulsified Asphalts	Aug. 1, 2019	
	80423	25	☒	Engineer's Field Office and Laboratory	Jan. 1, 2020	
	80229	26	☒	Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
	80417	27	☒	Geotechnical Fabric for Pipe Underdrains and French Drains	Nov. 1, 2019	
	80420	28	☐	Geotextile Retaining Walls	Nov. 1, 2019	
*	80433	29	☐	Green Preformed Thermoplastic Pavement Markings	Jan 1, 2021	
	80304	30	☐	Grooving for Recessed Pavement Markings	Nov. 1, 2012	Nov. 1, 2020
	80422	31	☐	High Tension Cable Median Barrier Reflectors	Jan. 1, 2020	Nov. 1, 2020
	80416	32	☒	Hot-Mix Asphalt – Binder and Surface Course	July 2, 2019	Nov. 1, 2019
	80398	33	☒	Hot-Mix Asphalt – Longitudinal Joint Sealant	Aug. 1, 2018	Nov. 1, 2019
*	80406	34	☒	Hot-Mix Asphalt – Mixture Design Verification and Production (Modified for I-FIT Data Collection)	Jan. 1, 2019	Jan. 1, 2021
	80347	35	☐	Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Nov. 1, 2014	July 2, 2019
	80383	36	☐	Hot-Mix Asphalt – Quality Control for Performance	April 1, 2017	July 2, 2019
	80411	37	☒	Luminaires, LED	April 1, 2019	
	80393	38	☒	Manholes, Valve Vaults, and Flat Slab Tops	Jan. 1, 2018	March 1, 2019
	80045	39	☐	Material Transfer Device	June 15, 1999	Aug. 1, 2014

	File Name	#		Special Provision Title	Effective	Revised
	80418	40	☒	Mechanically Stabilized Earth Retaining Walls	Nov. 1, 2019	Nov. 1, 2020
*	80424	41	☐	Micro-Surfacing and Slurry Sealing	Jan. 1, 2020	Jan. 1, 2021
	80428	42	☒	Mobilization	April 1, 2020	
	80412	43	☐	Obstruction Warning Luminaires, LED	Aug. 1, 2019	
	80430	44	☒	Portland Cement Concrete – Haul Time	July 1, 2020	
	80359	45	☒	Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Nov. 1, 2019
	80431	46	☒	Portland Cement Concrete Pavement Patching	July 1, 2020	
	80432	47	☒	Portland Cement Concrete Pavement Placement	July 1, 2020	
	80300	48	☐	Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
	3426I	49	☐	Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
	80157	50	☒	Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
*	80306	51	☒	Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 1, 2021
	80407	52	☒	Removal and Disposal of Regulated Substances	Jan. 1, 2019	Jan. 1, 2020
	80419	53	☒	Silt Fence, Inlet Filters, Ground Stabilization and Riprap Filter Fabric	Nov. 1, 2019	April 1, 2020
	80395	54	☐	Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
	80340	55	☐	Speed Display Trailer	April 2, 2014	Jan. 1, 2017
	80127	56	☒	Steel Cost Adjustment	April 2, 2004	Aug. 1, 2017
	80408	57	☐	Steel Plate Beam Guardrail Manufacturing	Jan. 1, 2019	
	80413	58	☒	Structural Timber	Aug. 1, 2019	
	80397	59	☒	Subcontractor and DBE Payment Reporting	April 2, 2018	
	80391	60	☒	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
*	80435	61	☒	Surface Testing of Pavements – IRI	Jan. 1, 2021	
	80298	62	☒	Temporary Pavement Marking	April 1, 2012	April 1, 2017
	80409	63	☒	Traffic Control Devices - Cones	Jan. 1, 2019	
	80410	64	☐	Traffic Spotters	Jan. 1, 2019	
	20338	65	☒	Training Special Provisions	Oct. 15, 1975	
	80318	66	☐	Traversable Pipe Grate for Concrete End Sections	Jan. 1, 2013	Jan. 1, 2018
	80429	67	☐	Ultra-Thin Bonded Wearing Course	April 1, 2020	
	80288	68	☒	Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
	80302	69	☒	Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
	80414	70	☐	Wood Fence Sight Screen	Aug. 1, 2019	April 1, 2020
	80427	71	☒	Work Zone Traffic Control Devices	Mar. 2, 2020	
	80071	72	☒	Working Days	Jan. 1, 2002	

The following special provisions are in the 2021 Supplemental Specifications and Recurring Special Provisions.

File Name	Special Provision Title	New Location	Effective	Revised
80277	Concrete Mix Design – Department Provided	Check Sheet #37	Jan. 1, 2012	April 1, 2016
80405	Elastomeric Bearings	Article 1083.01	Jan. 1, 2019	
80388	Equipment Parking and Storage	Article 701.11	Nov. 1, 2017	
80165	Moisture Cured Urethane Paint System	Article 1008.06	Nov. 1, 2006	Jan. 1, 2010
80349	Pavement Marking Blackout Tape	Articles 701.04, 701.19(f), 701.2(j) and 1095.06	Nov. 1, 2014	April 1, 2016
80371	Pavement Marking Removal	Articles 783.02-783.04, 783.06 and 1101.13	July 1, 2016	

File Name	Special Provision Title	New Location	Effective	Revised
80389	Portland Cement Concrete	Article 1020.04 Table 1 and Note 4	Nov. 1, 2017	
80403	Traffic Barrier Terminal, Type 1 Special	Articles 631.04 and 631.12	Nov. 1, 2018	

The following special provisions have been deleted from use.

File Name	Special Provision Title	Effective	Revised
80317	Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	Aug. 1, 2019

The following special provisions require additional information from the designer. The additional information needs to be submitted as a separate document. The Project Coordination and Implementation section will then include the information in the applicable special provision.

- Bridge Demolition Debris
- Building Removal - Case I
- Building Removal – Case II
- Building Removal - Case III
- Building Removal-Case IV
- Completion Date
- Completion Date Plus Working Days
- DBE Participation
- Material Transfer Device
- Railroad Protective Liability Insurance
- Training Special Provisions
- Working Days

GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET
Effective as of the: January 15, 2021 Letting

√	File Name	Title	Effective	Revised
	GBSP12	Drainage System	Jun 10, 1994	Jun 24, 2015
	GBSP13	High-Load Multi-Rotational Bearings	Oct 13, 1988	Apr 1, 2016
	GBSP14	Jack and Remove Existing Bearings	Apr 20, 1994	April 13, 2018
	GBSP15	Three Sided Precast Concrete Structure	Jul 12, 1994	Dec 21, 2016
	GBSP16	Jacking Existing Superstructure	Jan 11, 1993	April 13, 2018
	GBSP18	Modular Expansion Joint	May 19, 1994	Aug 9, 2019
	GBSP21	Cleaning and Painting Contact Surface Areas of Existing Steel Structures	Jun 30, 2003	Aug 9, 2019
	GBSP25	Cleaning and Painting Existing Steel Structures	Oct 2, 2001	Apr 22, 2016
	GBSP26	Containment and Disposal of Lead Paint Cleaning Residues	Oct 2, 2001	Apr 22, 2016
	GBSP28	Deck Slab Repair	May 15, 1995	April 13, 2018
	GBSP29	Bridge Deck Microsilica Concrete Overlay	May 15, 1995	March 1, 2019
	GBSP30	Bridge Deck Latex Concrete Overlay	May 15, 1995	Oct 20, 2017
	GBSP31	Bridge Deck High-Reactivity Metakaolin (HRM) Conc Overlay	Jan 21, 2000	March 1, 2019
	GBSP33	Pedestrian Truss Superstructure	Jan 13, 1998	Dec 29, 2014
	GBSP34	Concrete Wearing Surface	Jun 23, 1994	Oct 4, 2016
	GBSP45	Bridge Deck Thin Polymer Overlay	May 7, 1997	Feb 6, 2013
√	GBSP51	Pipe Underdrain for Structures	May 17, 2000	Jan 22, 2010
	GBSP53	Structural Repair of Concrete	Mar 15, 2006	Aug 9, 2019
	GBSP55	Erection of Curved Steel Structures	Jun 1, 2007	
	GBSP56	Setting Piles in Rock	Nov 14, 1996	Apr 1, 2016
	GBSP59	Diamond Grinding and Surface Testing Bridge Sections	Dec 6, 2004	Mar 29, 2017
	GBSP60	Containment and Disposal of Non-Lead Paint Cleaning Residues	Nov 25, 2004	Apr 22, 2016
√	GBSP61	Slipform Parapet	Jun 1, 2007	March 1, 2019
	GBSP67	Structural Assessment Reports for Contractor's Means and Methods	Mar 6, 2009	Oct 5, 2015
	GBSP71	Aggregate Column Ground Improvement	Jan 15, 2009	Oct 15, 2011
	GBSP72	Bridge Deck Fly Ash or GGBF Slag Concrete Overlay	Jan 18, 2011	March 1, 2019
	GBSP75	Bond Breaker for Prestressed Concrete Bulb-T Beams	Apr 19, 2012	
√	GBSP78	Bridge Deck Construction	Oct 22, 2013	Dec 21, 2016
	GBSP79	Bridge Deck Grooving (Longitudinal)	Dec 29, 2014	Mar 29, 2017
	GBSP81	Membrane Waterproofing for Buried Structures	Oct 4, 2016	March 1, 2019
	GBSP82	Metallizing of Structural Steel	Oct 4, 2016	Oct 20, 2017

	GBSP83	Hot Dip Galvanizing For Structural Steel	Oct 4, 2016	Oct 20, 2017
	GBSP85	Micropiles	Apr 19, 1996	Aug 9, 2019
	GBSP86	Drilled Shafts	Oct 5, 2015	Oct 4, 2016
√	GBSP87	Lightweight Cellular Concrete Fill	Nov 11, 2001	Apr 1, 2016
	GBSP88	Corrugated Structural Plate Structures	Apr 22, 2016	April 13, 2018
	GBSP89	Preformed Pavement Joint Seal	Oct 4, 2016	March 1, 2019
	GBSP90	Three Sided Precast Concrete Structure (Special)	Dec 21, 2016	April 13, 2018
	GBSP91	Crosshole Sonic Logging Testing of Drilled Shafts	Apr 20, 2016	Aug 9, 2019
	GBSP92	Thermal Integrity Profile Testing of Drilled Shafts	Apr 20, 2016	
	GBSP93	Preformed Bridge Joint Seal	Dec 21, 2016	March 1, 2019
	GBSP94	Warranty for Cleaning and Painting Steel Structures	Mar 3, 2000	Nov 24, 2004
√	GBSP96	Erection of Bridge Girders Over or Adjacent to Railroads	Aug 9, 2019	

LIST ADDITIONAL SPECIAL PROVISIONS BELOW

Temporary Soil Retention System, Special

The following Guide Bridge Special Provisions have been incorporated into other Specifications:

File Name	Title	Std Spec Location
GBSP17	Bonded Preformed Joint Seal	GBSP89,93
GBSP35	Silicone Bridge Joint Sealer	GBSP89,93
GBSP77	Weep Hole Drains for Culverts, Abutments, and Retaining Walls	503
GBSP95	Bituminous Coated Aggregate Slope Wall	511 Supp

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

File Name	Title	Disposition:
GBSP4	Polymer Modified Portland Cement Mortar	Contact BBS

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STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction" adopted April 1, 2016, the latest edition of the "Manual of Uniform Traffic Control Devices for Streets and Highways," 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 Sheets included herein which apply to and govern the construction of the Brush College Road at Faries Parkway Grade Separation Contract, Section No.: 09-00933-01-BR, Job No.: C-##-###-##, Contract No.: ##### in Macon County, and in case of conflict with any part or parts of said specifications, the said special provisions shall take precedence and shall govern.

CONTRACT NO.

LOCATION OF PROJECT

The proposed project is located along at the intersection of Brush College Road and Faries Parkway in Decatur, Illinois. The project limits are bordered on the south by the NS Rail Yard Viaduct and Mueller Ave to the north. The project limits extend approximately 500 feet along Faries Parkway west of Brush College Road and approximately 3,000 feet east along Faries Partway east of Brush College Road. The approximate latitude and longitude of the project are 39.963340 N, 88.898067 W. The net length and gross length are 5,855.36 feet (1.11 miles).

DESCRIPTION OF PROJECT

The work consists of roadway construction on new alignments, earthwork, landscaping, erosion control, hot-mix asphalt pavement, PCC pavement, pavement removal, mobilization, concrete bridge structure, guardrail, construction layout, retaining walls, approach slab, pavement marking, sidewalk, bicycle path, lighting, traffic signals, railroad track realignment, sanitary sewer relocation, storm sewer and drainage improvements, building demolition.

PROJECT MAINTENANCE

Should the City determine that an unsafe condition exists within the scope of this project; the City will attempt to contact the Contractor to resolve the unsafe condition. However, if the City is unable to contact the Contractor's designated representative or if the Contractor fails to respond within a four (4) hour period, the City may perform the necessary operations and the cost for time and materials will be deducted from the contract.

CONTRACTOR AVAILABILITY

At all times when work is being performed (by Contractor or subcontractor), the prime Contractor shall have on the job site someone in his/her direct employ who is capable of meeting with the Engineer and making decisions. If authorized by the Engineer, this condition may be satisfied by having a telephone number of someone who satisfies the above requirements.

CONTRACTOR RESPONSIBILITY

The contract plans indicate the location and elevations of the proposed work. Minor changes in the locations and elevations may be directed by the Engineer. Minor changes requested by the Engineer will be made without additional compensation to the Contractor.

Any inconveniences, delays or additional expenses incurred by the Contractor in complying with Special Provisions shall not be a basis for additional payment and shall be considered included in the contract.

PUBLIC SAFETY AND CONVENIENCE

The Contractor shall at all times conduct his work so as to ensure the least possible obstruction to traffic and inconvenience to the general public and residents in the vicinity of the work, and to ensure the protection of persons and property in a manner satisfactory to the Engineer. Roads within the project limits will be closed to thru traffic as indicated in the Traffic Control Plan. The Contractor is responsible for all traffic guidance and detours within the project limits. City of Decatur and Local emergency agencies shall be notified 21 days in advance of any full road closure.

CONSTRUCTION ACCESS

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

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

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

AVAILABLE REPORTS

Soil boring logs with locations are shown in the Plans for SN 058-W003, SN 058-W004, SN-W006, SN 058-W007, and SN 058-9202.

A geotechnical soils report drainage technical memorandum, and Preliminary Site Investigation were prepared for this project and are available for bidders' review at the following web address.

DECATUR WEB LINK

TRAFFIC CONTROL PLAN

Traffic Control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these special provisions, and any special details and Highway Standards contained herein and in the plans. Layout and maintenance of the traffic control devices shall be the responsibility of the Contractor. The appropriate traffic control devices shall be utilized for the various construction activities being performed by the Contractor.

Special attention is called to Articles 107.09 and 107.14 and Section 701 of the Standard Specifications for Road and Bridge Construction, other special provisions relating to traffic control and the following:

HIGHWAY STANDARDS
701101-04
701101-05
701106-02
701421-08
701422-10
701426-09
701701-10
701901-08
704001-08

DETAILS:
Traffic Control Detour Plan

SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS:
LRS 3 Work Zone Traffic Control Surveillance

SPECIAL PROVISIONS:
Work Zone Traffic Control Surveillance (LRS 3)
Temporary Information Signing
Public Convenience and Safety
Traffic Control Plan
Traffic Control and Protection (Arterial)
Construction Access
Changeable Message Signs

TRAFFIC CONTROL AND PROTECTION (ARTERIALS)

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

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

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

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

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

SUPPLEMENTAL WATERING

Description. This work shall consist of watering the seeded reinforced steepened slope. Watering shall be performed every two calendar days beginning one day after excelsior blanket is placed on the slopes. Water shall be applied at a rate of 3 gal./sq. yd. The Engineer may adjust watering frequency and application rate to maintain the seed bed in a moist condition while vegetation is established. The Engineer will determine when vegetation is sufficiently established to stop watering. All watering shall be done with a spray application. An open end hose will not be acceptable. The method of watering shall be approved by the Engineer.

Basis of Payment: This work shall be measured for payment in units of 1,000 gal. of water applied on the reinforced steepened slope. This work shall be paid for at the contract unit price per unit for SUPPLEMENTAL WATERING.

PAVEMENT REMOVAL

This work shall be performed in accordance with Section 440 except as follows:

Add the following sentence to the second paragraph of Article 440.01: Pavement removal shall also be defined as built-up oil and chip wearing surfaces over stabilized subbase.

Pavement Removal shall also include removal of the existing adjacent Pipe Underdrains.

PIPE CULVERT REMOVAL

Description. This work shall consist of the removal of the existing pipe culverts, including end sections at locations shown on the plans and as directed by the Engineer, and shall be done in accordance with the applicable portions of Section 501 of the Standard Specifications

The removal and disposal of existing pipe culvert end sections will not be measured and paid for separately, but will be included in the cost of PIPE CULVERT REMOVAL

The removal and disposal of existing pipe culvert concrete headwalls will be paid for separately.

Basis of Payment. This work shall be paid for at the contract unit price, FOOT, for PIPE CULVERT REMOVAL, which price shall include all labor, equipment and materials necessary to complete the work. No additional compensation will be allowed due to the various sizes, types, or lengths. The sizes, types and lengths shown in the plans are for information only and shall be verified by the contractor prior to bidding.

CONCRETE HEADWALL REMOVAL

Description. This work shall be in accordance with Section 501 of the Standard Specifications. This work shall include the removal of the cast-in-place concrete end sections from the 72” pipe culverts to remain in place. The removal shall be performed so the existing reinforced concrete pipe culvert to remain in place is not damaged.

Basis of Payment. Removal of existing pipe culvert concrete headwall will be paid for at the contract unit price EACH for CONCRETE HEADWALL REMOVAL.

REMOVING EXISTING MANHOLES, CATCH BASINS, AND INLETS

This work shall consist of removing catch basins, manholes and inlets and shall be performed in accordance with Section 605 of the Standard Specifications, except as modified herein.

The following shall be added to the first paragraph of Article 605.03 of the Standard Specifications:

When the hole formed by the removal of the structure is located in the subgrade of the proposed Brush College Road or Faries Parkway pavement or if the nearest point of the excavation falls within 2 feet of the proposed Brush College Road or Faries Parkway edge of pavement, controlled low-strength material (CLSM) shall be used to backfill the hole as noted on the drainage schedules. The CLSM shall be placed accordance with the requirements for CONTROLLED LOW-STRENGTH MATERIAL, SPECIAL.

The following shall be added to Article 605.06 of the Standard Specifications:

CLSM will be measured and paid for in accordance with CONTROLLED LOW-STRENGTH MATERIAL, SPECIAL.

CATCH BASIN, MANHOLE, INLET, DRAINAGE STRUCTURE CONSTRUCTION

This work shall consist of constructing catch basins, manholes, inlets or drainage structures with frames and grates or lids and shall be performed in accordance with Section 602 of the Standard Specifications, except as modified herein.

The following shall be added to the second paragraph of Article 602.12 of the Standard Specifications:

When the catch basin, manhole, inlet or drainage structure are located in the subgrade of the proposed Brush College Road or Faries Parkway pavement or if the nearest point of the excavation falls within 2 feet of the proposed Brush College Road or Faries Parkway edge of pavement, controlled low-strength material (CLSM) shall be used to backfill the space between the sides of the excavation and the other surface of the proposed structure as noted on the drainage schedules. The CLSM shall be placed accordance with the requirements for CONTROLLED LOW-STRENGTH MATERIAL, SPECIAL.

The following shall be added to Article 602.16 of the Standard Specifications:

CLSM will be measured and paid for in accordance with CONTROLLED LOW-STRENGTH MATERIAL, SPECIAL.

DRAINAGE DURING CONSTRUCTION

Description. The Contractor shall maintain existing drainage facilities or provide necessary temporary drainage facilities during construction. It is important that existing roadway and railroad drainage ditches, storm sewers and culverts be maintained and that water not be allowed to pond adjacent to roadways or tracks or in areas of embankment construction.

Where necessary, the Contractor shall use pumps to remove surface water.

Basis of Payment The cost of maintaining drainage, providing temporary drainage facilities, pumping, or any other work necessary so that the area is well drained at all times will not be paid for separately but shall be included in the contract unit price for drainage items in the Contract.

PROTECTION OF EXISTING DRAINAGE FACILITIES DURING CONSTRUCTION

Unless otherwise noted in the contract plans, the existing drainage facilities shall remain in use during the period of construction.

Locations of existing drainage structures and sewers as shown on the contract plans are approximate. Prior to commencement of work, the Contractor, at his own expense, shall determine the exact location of existing structures that are within the proposed construction site.

All drainage structures are to be kept free from any debris resulting from construction operations. All work and materials necessary to prevent accumulation of debris in the drainage structures will be considered as included in the cost of the associated drainage pay items of the contract. Any accumulation of debris in the drainage structure resulting from construction operations shall be removed at the Contractor's own expense, and no extra compensation will be allowed.

Existing frames and grates are to remain unless otherwise noted in the contract plans or as directed by the Engineer. Frames and grates that are missing or damaged prior to construction shall be replaced. The type of replacement frame or grate shall be determined by the Engineer, and replacement and payment for same shall be in accordance with Section 604 and Article 104.02 respectively, of the Standard Specifications unless otherwise noted in the plans or Special Provisions.

The Contractor shall take the necessary precautions when working near or above existing sewers and culverts in order to protect these pipes during construction from any damage resulting from his operations. All work and materials necessary to repair or replace existing pipes damaged because of noncompliance with this provision shall be as directed by the Engineer in accordance with Section 542 or 550 of the Standard Specifications and at the Contractor's own expense, and no extra compensation will be allowed.

During construction, if the Contractor encounters or otherwise becomes aware of any sewers, culverts, or underdrains within the right-of-way other than those shown on the plans, he shall so inform the Engineer who shall direct the work necessary to maintain the facilities in service and to protect them from damage during construction. Complying with this requirement shall be considered as included in the costs of the various pay items involved.

STORM SEWERS, CLASS B

Description. This work shall consist of furnishing all material, equipment and labor for storm sewers installation to collect the flow from the Type B Inlets located behind retaining wall 058-0007. The pipe shall be in accordance with Section 550 of the Standard Specifications, except as modified herein.

Materials. The storm sewer shall be Polyvinyl Chloride (PVC) Pipe, in accordance with Article 1040.03 (a) of the Standard Specifications.

Basis of Payment. This work shall be paid for at the contract unit price per FOOT for STORM SEWERS, CLASS B of the type and size specified in the plans.

DUCTILE IRON WATER MAIN

Description. This work shall consist of the furnishing and installation of a ductile iron pipe water main, as indicated on the plans or as directed by the Engineer.

General Requirements. The work shall be constructed in accordance with the applicable sections of the Section 40 and 41 of the "Standard Specifications for Water and Sewer Main Construction in Illinois" the latest addition, in the details shown in the plans, and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

Water main pipe: Water main shall be Ductile Iron Pipe, push-on, Class 52 (minimum) conforming to ANSI A.21.51 (AWWA C151) latest revision. Piping shall have a standard pipe coating outside and be lined with cement mortar lining and seal coated inside in accordance with ANSI A21.4 (AWWA C104 - latest revision) and as further specified herein. Ductile iron pipe shall be designed in accordance with ANSI A21.50 (AWWA C150 - latest revision) using 60,000 psi tensile strength, 42,000 psi yield strength and 10% elongation. All pipe shall have a minimum Class 52 pipe including the following: 3-1/2 feet to 6 feet cover (or as indicated on the plans), laying condition Type 5 (see AWWA C600 Figure 1), and at least 100 psi water hammer allowance and 2 to 1 factor of safety. The pressure rating, metal thickness class, net weight of pipe without lining, length of pipe and name of manufacturer shall be clearly marked on each length of pipe. All pipe, fittings and glands shall be completely coated outside with asphaltic coating, 1 mil thick, to which sufficient oil has been added to make a smooth coating, tough and tenacious when cold, not "tacky" and not brittle. All pipe shall be new and secured from responsible manufacturers. Any pipe delivered along the line of the improvement that is broken or damaged will be rejected.

Joints: All water main pipe joints shall be the push-on type consisting of bells cast integrally with the pipe, except where restrained joints are required as specified. The interior angular recesses of the bell shall conform to the shape and dimensions of a single molded rubber seating gasket, as described in ANSI A.21.11 (AWWA C111 - latest revision). The interior dimensions of a single molded rubber seating gasket is such that it will admit the insertion of the spigot end of the joining pipe in a manner that will compress the gasket tightly between the bell of the pipe and the inserted spigot, thus securing the gasket and sealing the joint. Lubricant used in conjunction with slip joints shall be that recommended by the suppliers or as approved by the Engineer. When detailed on the drawings, Contractor shall utilize gaskets that protect against entrance of hydrocarbons (or other contamination) through permeation through any pipe joint sealing material used in construction of the line.

All joints shall be furnished with two silicon bronze serrated wedges or conductive gaskets (or other conductive accessory, as approved by the Engineer) at each joint. The wedges shall be installed at 180-degree intervals after the joint is completed.

Pipe Restraint: All water main joints and fittings shall be restrained in accordance with restrained joint table below (and the notes located after the table).

Fitting Type		6" Diameter	8" Diameter	12" Diameter	16" Diameter	24" Diameter	30" Diameter
HORIZONTAL	Theta/2	**DIP**	**DIP**	**DIP**	**DIP**	**DIP**	**DIP**
90 degree bend	0.79	45	59	86	112	164	201
45 degree bend	0.39	19	25	36	47	68	84
22.5 degree bend	0.20	9	12	17	23	33	40
11.25 degree bend	0.10	5	6	9	1 1	17	20
Tee (or tapping sleev)		40	58	93	128	199	251
Plug (dead end)		42	55	80	105	156	193
VERTICAL	Theta/2	**DIP**	**DIP**	**DIP**	**DIP**	**DIP**	**DIP**
90 degree bend	0.79	83	110	159	210	311	386
45 de roe bend	0.39	35	46	66	87	129	160
22.5 degree bend	0.20	17	22	32	42	62	77
11.5 degree bend	0.10	9	11	16	21	31	38

1. All nuts and bolts shall be Corten or stainless steel.
2. The required length of restrained pipe at all fittings, valves, plugs, etc. shall conform to the Table included herewith.
3. Install the total restrained length of pipe for elbows as shown in the Table on each side of each elbow.
    a. The restrained lengths shown for vertical bends are for vertical down bends.
    b. The restrained length for vertical up bends is the same as for horizontal bends.
4. Plugs require restrained pipe in only one direction.
5. The length of restrained pipe at valves: Same as for plugs or dead ends.
    a. Install the restrained length of pipe as noted in the Table on both sides of each valve.
6. Base the length of restrained pipe for tees on the perpendicular branch, as shown in the Table, on the size of the run or branch of the tee whichever is the larger diameter.
    a. Tees require only the perpendicular branch to be restrained.
    b. Restrain both plugs and tees to the distances given in the Table. Distances shown are in feet.

The approved types of restrained joints are listed in the table below.

No.	Piping Application	Restrained Joint Requirements
1	16-inch diameter water main and smaller[1]	Field Lock Gaskets, Fast Grip Gasket, Romac Grip Rings, or TR Flex
2	24-inch and 30-inch diameter water main	Flex Ring, TR Flex, or HDSS
3	All sizes of water main installed in casing pipe	Flex Ring, TR Flex, or HDSS
4	Connections with MJ (or TR flex) solid sleeves (12-inch diameter and smaller)	Romac Grip Rings or TR Flex
5	Connections with TR flex (or MJ) solid sleeves (16-inch diameter and greater)	TR Flex (Megalugs only when approved by the Engineer)
6	Other, when required for construction	As submitted by the Contractor and approved by the Engineer
1. This does not apply when the water main is installed in a casing pipe (see No. 3).		

Thrust blocks shall also be provided in accordance with the plans.

Polyethylene Encasement: All water main and fittings shall be encased in a high-density cross-laminated polyethylene encasement (8 mil minimum thickness) with its material specification and installation method in accordance with ANSI A21.5/AWWA 105 – latest revision and using "Method A" installation. Any slack in the encasement shall be neatly folded around the pipe and taped flat. All pipe, fittings and appurtenances such as valves, tees tapping saddles and crosses shall be polyethylene encased when they are installed within the area requiring such encasement. Polyethylene encasement shall stop short of hydrants to allow proper draining of the hydrant shoe.

Construction Requirements.

Excavation: The minimum bury depth of the water main shall not be less than 3.5 feet. If the excavation has been made deeper than necessary, or is required deeper for adjustments for fire hydrants, valves, services or for separation from sewer and other utilities, or as indicated in the drawings, the work shall be performed at no additional cost, regardless of depth. If necessary, bell holes of sufficient depth shall be provided across the bottom of the trench to accommodate the bell of the pipe providing sufficient room for joint making, and to ensure uniform bearing for the pipe. The cost associated with the excavated material removal and disposal, trench/pit protection, and stockpile protection shall be considered incidental to this pay item.

All required work to connect to and transition from existing water main is included under this item. Any temporary support or bracing of existing utilities is included under this item and must be coordinated with the affected utilities. Any water main dewatering required during the installation of water main pipe shall be considered included as part of the installation of the water main.

Sequence of Operations: All existing valve and hydrant operations shall only be performed by the City of Decatur (City). The Contractor's proposed sequencing and schedule of operations shall be submitted to the City a minimum of two weeks before any shut down of the water system can be made.

Protection of Water Mains and Water Service Lines: Contractor shall follow IEPA water/sewer separation requirements, including, but not limited to the following: Water main shall be laid at least 10 feet horizontally from any sanitary sewer, storm sewer or sewer manholes, whenever possible. The distance shall be measured edge-to-edge. When local conditions prevent a horizontal separation of 10 feet, a water main may be laid closer to a storm or sanitary sewer provided that:

1. The bottom of the water main is at least 18 inches above the top of the sewer.
2. Where this vertical separation cannot be obtained, the sewer shall be constructed of materials and with joints that are equivalent to water main standards of construction.

Water main crossing storm or sanitary services or sewers shall be laid to provide a separation of at least 18 inches between the bottom of the water main and the top of the sewer. When local conditions prevent a vertical separation of at least 18 inches the following construction shall be used.

1. Sewers passing over or under water main should be constructed of the materials described for parallel installation where vertical separation cannot be obtained.
2. Water mains passing under sewer shall, in addition, be protected by providing:
    a. A vertical separation of at least 18 inches between the bottom of the sewer and the top of the water main.

b. Adequate structural support for the sewers to prevent excessive deflection of joints and settling on and breaking the water mains.
c. As an alternate, either the water main or the sewer could be installed inside a casing pipe which would extend at least ten (10) feet on each side of all crossings.

In making such crossings, it is preferable to center a length of water main pipe over the sewer to be crossed so that the joints will be equidistant from the sewer and as remote there from as possible. Where a water main must cross under a sewer, a vertical separation of eighteen (18) inches between the bottom of the sewer and the top of the water main shall be maintained, along with means to support the sewer lines to prevent their settling.

Installation and Backfilling: The work shall be constructed in conformance with the applicable sections of “Standard Specifications for Water and Sewer Main Construction in Illinois” and City of Decatur Standard Specifications for Water Main Construction, except as specified herein.

Backfilling of all water main shall be made in accordance with Method 1, Article 603.08 of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, latest revision. Jetting will not be permitted. After the pipe is laid (and as soon as possible after testing,) the trench shall be filled with either selected earth or select graded aggregate free from boulders or any foreign matter. Ashes, cinders, or other corrosive material shall not be allowed. Backfill around the pipes and to a depth of six (6) inches above the top of the pipes shall be thoroughly compacted. Place material in eight (8) inch lifts and compact using a mechanical tamper or roller. Care should be taken to prevent any lateral movement of the pipe from the tamping operation. When not otherwise ordered, the backfilling shall not be left unfinished more than three hundred (300) feet behind the completed pipe work.

During the installation of all water mains, care must be exercised so that the trees within the right-of-way area and on adjacent private property will not be disturbed.

In case the character of the ground requires it, to protect the work, the street or the workmen, the side of the trenches shall be supported with suitable bracing and sheeting. The trench shall be excavated to an additional depth of six (6) inches (or more) and clean sand, crushed rock or selected trench backfill, as directed by the Engineer, shall be tamped into the trench for minimum depth of six (6) inches below the bottom of the pipe.

The trenches shall be kept free of water during the progress of the work. All tools and equipment for pumping and bailing and all materials for building drains or other work necessary to keep the trenches free of water shall be furnished by the contractor. This work and equipment shall be considered incidental to the contract and no extra compensation will be allowed.

All sewer, water, gas and other pipes or conduits and service connections encountered shall be carefully supported and protected from damage while the excavations are being made and backfilling finished.

Water main pipe shall be handled and installed per ANSI/AWWA C600 (latest revision) and by the following additions:

Pipe shall be handled by mechanical equipment or other approved means. Handling of pipe by means of hooks at both ends of the pipe will not be allowed.

All pipe and fittings shall be thoroughly cleaned by brushing with a wire brush at joints and by swabbing the pipe interior.

Pipe shall be laid on a firm bed and as straight as possible. Excavation must be made under the bell of each pipe so the entire length of pipe will lay on the bottom of the trench and the pipe weight will not rest on the bell.

In laying mechanical joint pipe, all surfaces which come in contact with the rubber gasket seals shall be thoroughly brushed with a wire brush and just prior to slipping the gasket over the spigot end and into the bell, all surfaces including the gasket, shall be thoroughly cleaned with soap and water. The gland and gasket shall then be placed on the spigot end and the pipe inserted in the bell. The gasket shall then be pushed into position and evenly seated, the gland shall be placed in position, the bolts inserted, and the nuts tightened. When tightening bolts, the gland shall be brought up toward the pipe flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. This shall be done by partially tightening the bottom bolt first, then the top bolt, next the bolts on either side, and last the remaining bolts. This cycle shall be repeated until all bolts are within the following range of torque (or as recommended by the manufacturer. If a conflict exists, Contractor shall notify the Engineer):

BOLT SIZE INCHES	RANGE OF TORQUE FT. - LB.
5/8	40 - 60
3/4	60 - 90
1	70 - 100
1-1/4	90 - 120

The above torque loads shall be applied with torque measuring wrenches.

Mechanical joint pipe, fittings, and other appurtenances shall be furnished according to ANSI A21.11 (AWWA C111 - latest revision) and furnished complete with mechanical joint accessories. The bolts and nuts to be alloy steel (Corten type such as US alloy, stainless steel, or approved equal). Gaskets to be made of plain rubber with 70-75 durometer.

In laying "Push-On" pipe, the bell socket and the plain end of the entering pipe must be absolutely clean and free of foreign matter prior to the seating of the gasket. The gasket shall be wiped clean, flexed, and then placed in the socket with the large round end entering first, so that the gasket is seated evenly around the inside of the socket with the groove fitted over the bead. As the gasket fits snugly in the gasket seat it may be necessary to smooth out the gasket around the entire circumference to remove any bulges which might interfere with the proper entry of the spigot end.

A thin film of lubricant shall be applied to the inside surface of the gasket which will come in contact when entering the plain end of the pipe. In some cases, it is desirable to apply a thick film of lubricant to the outside of the plain end for about one inch back from the end. Lubricant other than that furnished with the pipe shall not be used. The plain end of the pipe shall be aligned and carefully entered into the socket until it just makes contact with the gasket.

Joint assembly shall then be completed by forcing the plain end of the entering pipe past the gasket until it makes contact with the bottom of the socket. The first painted stripe shall be inside the socket and the front edge of the second stripe shall be approximately flush with the bell face. If the assembly is not accomplished with the application of reasonable force, the plain end of the pipe shall be removed to check for the proper positioning of the gasket. After proper

assembly, the bronze serrated wedges (or other approved accessory) shall be installed. All work shall be done in accordance with the pipe manufacturer's requirements.

Installation of restrained joint pipe, when required, shall be the same or similar as "push-on" pipe, except that they shall also be installed in accordance with the restrained joint manufacturer's recommendations.

Trench water shall be kept out of the pipe and the pipe kept closed by means of test plugs whenever the work is not in progress.

Caps or plugs shall be put on all open ends of pipe, open bends, open tees, or crosses. Pipe laid adjacent to curbs and on all unsupported changes of direction, all tees, crosses, and other fittings receiving right angle or diagonal thrusts, and all plugs at blanked openings shall be firmly backed against solid earth with suitable masses of concrete of a minimum thickness equal to the pipe diameter and of a length to reach from end to end. See CONCRETE THRUST BLOCKS (SPECIAL) for additional details.

All required connections to existing water mains or services shall be completed so that no service or existing water main shall be left open and unconnected at the close of a working day.

Water Main Crossing Utilities: Wherever the water main crosses existing and/or proposed utilities, including sewer, telephone, electric, gas, etc., the Contractor shall be responsible for determining the existing depth of said utilities prior to installation at no additional cost.
Land Surveying:

1. Contractor shall employ a Land Surveyor registered in State of Illinois and acceptable to the Engineer/Owner.
2. Contractor shall locate and protect survey control and reference points. Promptly notify Engineer of discrepancies discovered.
3. Verify and confirm drawing dimensions, elevations, and water main locations.
4. Provide field engineering services. Establish pipeline elevations, utilizing recognized engineering survey practices.
5. Maintain a complete and accurate log of control and survey work as it progresses.
    a. After installation and prior to backfilling, Contractor shall survey the location of the following items:
        i. Pipeline (at least one shot per stick (18' or 20') of pipeline installed, but not including piping when installed in a casing pipe)
        ii. Beginning and end of steel casing pipes
        iii. All fittings
        iv. Valves and boxes
        v. Fire Hydrants
    b. Survey locations shall include northings, eastings, and elevations.
6. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
7. The project shall not be considered substantially complete until the Owner has received and approved the AutoCAD .dwg files and survey points (including elevations, northings, eastings, point numbers, point descriptions, etc.) of all survey work performed during the course of the project. The Contractor shall also provide GIS (i.e. .shp files) data of the

installed water main alignment, fittings, valves, boxes, hydrants, and casing pipes. All survey work shall be performed in state plan coordinates with a City approved datum and in approved state plane coordinates.

Flushing, Pressure Testing, and Chlorination: Submit procedures to Engineer and City for review and approval, detailing method and means of pressure test, plan for preliminary flushing and final flushing (including discharge and drainage points), ability to meet minimum flushing velocity requirements, method of disinfection, proposed chemicals, and treatment levels for review. Submit procedures for neutralizing and disposal of heavily chlorinated water. Indicate and describe proposed procedure of chlorination, dechlorination and flushing, including sampling point(s). The time and procedure for the flushing of new water mains shall be approved by the City's Water Distribution Supervisor and the Engineer to ensure any special water distribution system considerations are addressed. All tests shall be made in the presence of the City Engineer or his assigned representative.

Any additional taps, outlets, piping, valves, and appurtenances (including but not limited to excavation, backfill, compaction, temporary pavement, restoration) required for pressure testing, flushing, and disinfection shall be the responsibility of the Contractor at no additional cost to the Owner. Copper whips for flushing or sampling shall be utilized as needed. Contractor shall be responsible for protecting and/or backfilling any required excavations before, during, and after the flushing and disinfection operations in accordance with the Contract documents.

Pressure and Leakage Test: The work of laying the pipes, fittings, hydrants, valves and other appurtenances shall be of such character as to leave all the pipes and connections watertight. To confirm these conditions, the water main and all appurtenances shall be subjected to a test of water pressure of not less than one hundred ten (110) pounds per square inch.

The tests shall be made between valves as far as practicable, or as directed by the Engineer, within two (2) working days of the completion of each section of main. Where it is impracticable to test between valves or near connections to existing mains, temporary caps or plugs shall be placed on the mains to close off a section of the main so that it may be tested. The pressure shall be raised to a minimum of one hundred ten (110) pounds and so maintained for a period of not less than two (2) hours.

The amount of water forced into the main during this time shall be determined and this amount shall be taken as a basis to compute the leakage for twenty-four (24) hours. Pressure shall not vary more than two (2) pounds from the above during the test period. Results of tests shall be submitted to the City.

Allowable leakage shall be computed on the basis of fifteen (15) gallons per inch of pipe diameter, per mile of length, per twenty-four (24) hours. On this basis, the allowable leakage per one thousand (1,000) lineal feet of water main is as follows:

PIPE DIAMETER (INCHES)	LEAKAGE PER 1,000 FEET IN 24 HOURS (GALLONS)
2	0.14
3	0.21
4	0.28

6	0.43
8	0.57
10	0.71
12	0.85
14	0.99
16	1.13
18	1.28
20	1.42
24	1.70
30	2.13

For water mains of various sizes, Contractor shall calculate the allowable leakage in accordance with AWWA C-600. If the leakage is at a greater rate than that specified, the trenches shall be re-excavated where necessary, the joints re-made and all defective work and materials replaced until the leakage is reduced to the allowable amount. This work is at the contractor's expense.

When the City can conveniently furnish water for testing pipe joints, jetting backfill or other purposes, there shall be no charge, except for the labor of turning the water off and on. However, the City shall not be obligated to furnish water, with or without charge, unless it can do so with reasonable convenience and entire safety to the public.

The necessary regulation or operation of valves to allow for the connections being made shall be performed only by the employees of the City. Notice must be given forty-eight (48) hours in advance when a shut off is to be made to allow for a connection.

Additional leakage/pressure testing requirements include the following

1. Perform all testing in accordance with AWWA C600, except as noted herein.

2. Slowly fill each valve section with potable water.

3. Expel all air from the pipe by means of taps at the high points in the pipeline. After the pipe, 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 valve vaults and other connections shall be examined for leaks. If any are found, they shall be stopped prior to the pressure test.

4. All valves shall be field tested to the specified hydrostatic pressure in both directions. There shall be no visible leakage under hydrostatic pressure during the pipeline test.

5. Plug the taps.

6. Remove and replace any cracked or defective pipe discovered during test at no cost to the Owner.

7. Repeat the pressure test until satisfactory.

8. All line valves shall be open after the field test.

Preliminary Flushing:

1. Perform the flushing operation after the pressure test has been made and in accordance with AWWA C651. All flushing of mains shall be done during periods of low water demand or at such times as may be directed by the Engineer and Water Services Supervisor.

2. Flush each valve section of the completed main prior to disinfection, as thoroughly as possible with water pressure and outlets available. Minimum flushing velocity shall be 3 fps and in accordance with AWWA requirements.

3. Contractor shall provide hard piping as needed from flushing points to local inlets and catch basins or other location as approved by the Engineer.

4. Provide all fittings, piping, valves, appurtenances, hydrants, and adapters, whether temporary or permanent, to meet the flushing requirements of this specification.

5. Flushing shall be done through open ends of the water main or appropriately sized temporary flushing piping approved by the Engineer. At the end of each straight run, flumes or suitable means shall be provided to carry the waste water up to and over the ground surface to an outlet. To keep the waste water to a minimum, a "pig" shall be inserted into the upstream end of the new pipe during construction. Flushing through fire hydrants will not be permitted.

6. Prior to approval of flushing, turbidity of the water must be shown to be less than or equal to 1 NTU or as approved by the Owner. Samples shall be taken in the presence of the Engineer, and Engineer shall approve the sample prior to analysis. Provide certified results of analysis to Engineer and Owner.

7. All flushing of mains shall be done during periods of low water demand or at such times as may be directed by the Engineer and Water Services Supervisor.

Disinfection:

8. To guard against a contaminated water supply and to provide safe, potable water for domestic use, all mains shall be thoroughly sterilized before being placed in service.

9. Water mains shall be sterilized as soon as pressure tests and flushing are completed.

10. Disinfect all new mains and existing piping, disturbed in any manner by the work, before being placed in service. Draining the water from existing piping or even lowering the water pressure more than one-half will constitute disturbances of the piping.

11. Disinfect water mains, valves and other appurtenances incorporated into the main construction by utilizing chemicals in accordance with AWWA C651 and AWWA B300. The form of chlorine to be used shall be granular calcium hypochlorite. Any deviation from this must have written approval from the Engineer**.** Provide dechlorination at the discharge point in accordance with AWWA and IEPA requirements.

12. During the disinfection operation; Operate valves, hydrants and other mechanical devices controlling the flow of water to permit full effectiveness of the chlorine solution within the main being disinfected. Operate valves so that the strong solution will not flow back into the supply line nor flow into water mains already in service.

13. Samples should be taken at approximately 500-foot intervals and at each branch line. Under special conditions on long construction runs, samples may be taken every 1,000 feet, but only with approval of the Engineer.

14. When the water in the treated main is proven comparable to that of the source, collect water samples at each of the sampling taps and submit to a laboratory on two separate successive days. Samples cannot be collected from hydrants or hose connections that have not been disinfected. If the results of the bacteriological examination are satisfactory, the main shall be placed in service after any final connections are made (with additional disinfection performed in accordance with AWWA, City of Decatur, and IEPA requirements. If the initial disinfecting fails to result in approval, repeat the disinfecting procedure until satisfactory results are obtained.

15. Final flushing, bacteriological tests and any re-disinfection shall be done per AWWA C651 and State of Illinois requirements.

16. All bacteriological analyses shall be paid for by the Contractor until the satisfactory results are obtained.

Method of Measurement. This work will be measured in feet along the centerline of the pipe at the ground level. Measurement shall not include fittings and valves.

Basis of Payment. This work as described above, shall be paid for at the Contract Unit price per FOOT for DUCTILE IRON WATER MAIN, of the diameter specified, whether restrained or unrestrained, which price shall be payment in full for all labor, equipment, and materials, necessary to perform said work, including, but limited to, pipe, polyethylene encasement, gaskets, restrained joints, special couplings (see DUCTILE IRON WATER MAIN FITTINGS for payment for solid sleeves, elbows, tees, etc.), pressure testing, flushing, and chlorination required for a complete and operational installation. Work also includes the removal and proper disposal of excavated material.

Payment for restrained piping, joints, and/or retainer glands or appurtenances will not be measured separately for payment but shall be INCLUDED in the cost of the DUCTILE IRON WATER MAIN.

Trench Backfill will be paid for separately.

WATER VALVES

Description. This work shall consist of the furnishing and installation of valves at locations as shown on the plans and as directed by the Engineer. The work shall be constructed in accordance with the applicable sections of the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition and the City of Decatur Standard Specifications for Water Main Construction, except as noted herein.

General Requirements. This work shall be performed in accordance with the applicable portions of Section 561 of the Standard Specifications and Section 42 of the Standard Specifications for Water and Sewer Main Construction in Illinois, and City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

Water valves are to be gate valves manufactured by the Mueller Co. (A-2361) or approved equal, with mechanical joints meeting the requirements of AWWA C-111/A21.11 and supplied with factory installed 304 Stainless Steel trim. Manufacturer's certification will be required, no substitutions unless approved by the City of Decatur. All mechanical joints on valves shall be supplied with 304 Stainless Steel T-Head Bolts and Nuts. All valve operating nuts are to be housed in a valve box.

Valves 16-inch diameter and large shall also meet the following requirements:

1. Valve shall be laid horizontal and shall include a bevel gear actuator
2. Valves 18-inch diameter and larger shall include a bypass valve.

All valves shall be AWWA Resilient-Wedge type gate valves and shall equal or exceed the AWWA C509 - latest revision standard. The valves shall be ductile iron body, bronze mounted, with non-rising stem.

All valves through 12 inches in size shall have a working pressure rating of 200 psi with a test pressure of 400 psi. Valves larger than 12 inches shall have a working pressure rating of 150 psi with a test pressure of 300 psi. All valves shall be provided with a 2-inch operating nut which opens to the right (clockwise).

Gate valves shall be provided with two "O" ring stem seals. One "O" ring shall be located below the thrust collar. The space between the "O" rings and around the thrust collar shall be filled with a lubricant to provide for thrust collar lubrication each time the valve is operated.

The interior of the valve body shall be free of pockets or ledges where sediment or debris can collect and shall be bubble tight at 200 psi working pressure in either direction and with the valve in any position.

The "O" ring stem seal(s) shall be replaceable with the valve under "working" pressure.

The valve body and bonnet shall be coated on all exterior and interior surfaces with a bonded epoxy coating conforming to the requirements of AWWA C116 - latest revision - Protective Fusion-Bonded Epoxy Coatings for the Interior Surfaces of Ductile-Iron and Grey-Iron Fittings. Interior wetted ferrous surfaces shall be coated a nominal 10 mils thick for long life; and body exterior shall have a minimum 3 to 4 mils coating thickness in order to provide protection in shipment and storage.

Valves shall be furnished with mechanical joint end connections with gaskets.

All valves shall have the name of the manufacturer and year of manufacture clearly cast on the valve body

All valves shall be new and secured from responsible manufacturers and use of valves other than specified above must receive written approval from the Engineer not later than two (2) weeks prior to bid opening.

Valves and fittings shall be set on a foundation or footing of concrete laid on firmly compacted ground. The foundations shall be solid concrete block(s) not less than 8” X 8” X 16” for 6" and 8" water mains and a minimum of 2 - 8” X 8” X 16” solid concrete blocks for 10" and larger water mains. Leveling shims shall be of hard wood material.

The elevation of the valves and fittings and their foundations shall be such as to conform to the height of the connecting pipe so there will be no strain on the joints.

Prior to the purchasing and/or ordering any valves, the Contractor shall field verify the location of all existing and proposed utilities, facilities, and structures, in order to confirm that the proposed valve is able to be installed as designed. The Contractor shall confirm his findings to the Engineer in writing.

Method of Measurement. This work will be measured at the contract unit of each water valve installed and at the size specified. The Contractor shall verify, under the control of the Engineer and City, that all newly installed valves are in fully operating condition, open and in service unless otherwise specified by the Engineer and the City’s Water Distribution Supervisor prior to final acceptance and payment.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for WATER VALVES, of the size specified, which price shall include all labor, equipment, and materials necessary to perform said work. Valve boxes and hydrant valves shall be paid for separately, under the pay items “VALVE BOX” and “FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX”.

FIRE HYDRANT EXTENSION

Description. This work shall consist of performing a fire hydrant extension to adjust the existing hydrant to the new grade elevation at locations shown on the Plans or as directed by the Engineer.

General Requirements. This work shall be performed in accordance with the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

Hydrant extension kits shall be in accordance with the specified hydrant manufacturer's requirements (i.e. Mueller A-320-35). Nuts and bolts shall be stainless steel.

If the hydrant extension size is not available, Contractor shall provide 6-inch diameter DUCTILE IRON WATER MAIN and DUCTILE IRON WATER MAIN FITTINGS (including all necessary restrained joint appurtenances) to assist in meeting the required hydrant elevation.

Method of Measurement. The work will be measured for payment in place for each lift kit provided, regardless of length.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for FIRE HYDRANT EXTENSION, at the specified size, which price shall be payment in full for performing the work therein and shall include all materials, labor and equipment necessary to perform the work as specified. If Contractor installs a FIRE HYDRANT EXTENSION for his own convenience or due to a mistake by the Contractor, this work shall be not be paid for, but shall be at the Contractor's own expense.

FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX

Description. The contract unit price shall be full compensation for all labor, equipment and materials to excavate, prepare trench bedding, install fittings, valve, valve box and hydrant, placement of 1" washed stone for drain field, backfill, compaction and proper disposal of waste or surplus materials.

General Requirements.

All fire hydrants shall equal or exceed the AWWA C502 - latest revision standard. They shall be of the compression type with the main valve closing with pressure. They shall be of the dry barrel, dry top design.

The hydrant body shall be cast of ASTM A-126 Grade B gray iron with all interior parts fully bronze mounted, including a permanent bronze bushing threaded and locked into the shoe casting providing bronze to bronze threads between the seat ring and shoe for easy removal of the main valve assembly.

Hydrants shall be of the "breakable" type so designed that neither the barrel nor stem shall be damaged on impact and so designed that repairs may be performed by easily replaceable components.

The hydrant shall have only one flange above ground line secured with a traffic model breakable safety flange that will break clean on vehicular impact. The breaking point of the stem coupling shall be below the flange so that a tire cannot depress the stem and open the main valve.

The hydrant bonnet assembly shall be provided with an integral lubricant reservoir so designed that operating nut threads, stem threads, and thrust collar are automatically lubricated each time the hydrant is operated. The lubricant reservoir, stem threads, and operating nut shall be sealed from the waterway by two (2) "O" ring stem seals bearing on a bronze bushing near the top of the stem. The lubricant reservoir and operating nut shall also be sealed to the atmosphere to prevent leakage of lubricant and contamination of lubricant by the elements.

Hydrants shall have a specially molded rubber main valve which shall seat against an ASTM B-62 bronze seat ring with an inside diameter of 5-1/4 inches. The main valve assembly shall include two integral drain valves which operate automatically each time the hydrant is opened or closed with no toggles, springs, and adjustable mechanisms. There shall be at least two bronze lined drain ports located in the hydrant shoe.

Hydrants shall be furnished with two 2-1/2-inch hose nozzles and one 4-inch pumper nozzle. Pumper nozzle to face the street. All nozzle threads shall be National Standard Threads. They shall be furnished with a pentagon-shaped 1-1/4-inch bronze operating nut with an approved weather cap. All hydrants shall be opened by turning right (clockwise).

Each fire hydrant shall be installed using an auxiliary valve that is tied to the main line through the use of a mechanical joint hydrant (or anchor) tee with rotating gland. The fire hydrant valve and line shall be 6 inches. The fire hydrant shall be installed using a 6-inch diameter anchor coupling (to be measured and paid in accordance with the pay item DUCTILE IRON WATER MAIN FITTINGS) and if needed, a FIRE HYDRANT EXTENSION. The contractor may substitute DUCTILE IRON WATER MAIN, 6-INCH and a 6-inch diameter offset nipple fitting (measured and paid in accordance with the pay item DUCTILE IRON WATER MAIN FITTINGS).

Hydrants shall be furnished with Mechanical Joint inlet (shoe) connection and shall be sized for a minimum bury (trench) depth of 4-1/2 feet.

The Mueller Centurion Model A423 (preferred) or the Modern Centurion Model A442 (only if Contractor can document that A423 is not available) are approved hydrants.

Use of Hydrants other than as specified above, must receive written approval from the City and with sufficient notice for an addendum to be issued prior to bidding.

Fire Hydrants shall be set in such a manner that the steamer connection is facing the closest street. They shall be set vertically upon a solid concrete block not less than 8” X 8” X 16” (See Standard #4000).

Hydrants shall be set with solid concrete blocking (8” X 8” X 16”), placed behind the barrel and behind the tee connection between the water main and the hydrant lead to prevent movement of the pipe or hydrant (see construction detail in Drawings). Poured concrete blocking is allowed, but only with the approval of the Engineer. When shims are required, they shall be hard wood shims.

To provide adequate drainage, the base of the hydrant shall be enclosed with a vault built of brick, constructed to allow an eight (8) inch clearance around the base and tapered so as to fit closely around the barrel of the hydrant just above the lower flange. Drain field using 1” washed stone is an approved equal to the brick vault. Use 1” washed river rock or approved equal.

After fire hydrants have been set, backfilled and tested, the surfaces of the hydrant above the ground line shall be cleaned by wire brushing and washing with soap and water, and the exposed surfaces shall be painted with one (1) coat of Valspar Syn-Gard with a color approved by the City.

The valve boxes shall be of the adjustable type, shall be set at finished grade, and shall have the valve box covers stamped “Water”. The applicable portions of VALVE BOX special provision shall also apply. The applicable portions of WATER VALVE special provision shall apply to the auxiliary gate valve.

The Contractor shall verify under the control of the Engineer and the City that all new fire hydrants are in proper operating condition prior to final acceptance and payment.

Method of Measurement. This work shall be measured per EACH fire hydrant with auxiliary valve and valve box complete, including all appurtenances, at each location.

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

Six (6) inch water main connection piping and fittings as specified shall be measured and paid for separately, either under “DUCTILE IRON WATER MAIN” or “DUCTILE IRON WATER MAIN FITTINGS”.

COMBINATION CURB AND GUTTER, TYPE B-6, 24 (VARIABLE WIDTH GUTTER FLAG)

Description: This work shall consist of constructing combination concrete curb and gutter in accordance with Section 606 of the Standard Specifications, and at the locations and transition dimensions specified on the plans, and as directed by the Engineer.

Curing: The combination concrete curb and gutter shall be cured in accordance with Article 1020.13 of the Standard Specifications.

Method of Measurement: COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24 (VARIABLE WIDTH GUTTER FLAG) shall be measured for payment in feet in the flow line of the gutter and along the face of concrete curb.

Basis of Payment: This work shall be paid for at the contract unit price per foot for COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24 (VARIABLE WIDTH GUTTER FLAG), which price includes payment in full for all labor, tools, equipment, and incidentals required to perform the work as specified herein.

CONCRETE MEDIAN SURFACE, 6 INCH

Description. This work shall consist of constructing concrete median.

Construction. This work shall be completed in conformance with Section 606 of the Standard Specifications and IDOT Standard 606301-4.

Basis of Payment. This work shall be paid for at the contract unit price per square foot for CONCRETE MEDIAN SURFACE, 6 INCH.

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES

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.

- Station 77 + 58.90 & offset 87.00 feet LT to Station 77 + 81.82 & offset 43.00 feet RT relative to CL of North Brush College Road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Chromium, Iron, Manganese, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Indeno[1,2,3-cd]pyrene.
- Station 64 + 84.03 & offset 35.31 feet LT to Station 67 + 21.02 & offset 72.59 feet RT relative to CL of North Brush College Road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Arsenic, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluorathene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene.
- Station 208 + 50.33 & offset 0.00 feet LT to Station 210 + 15.90 & offset 42.50 feet LT relative to CL of East Faries Parkway. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(b). COC sampling parameters: Iron, TCLP Iron.
- Station 212 + 40.11 & offset 131.55 feet RT to Station 214 + 00.44 & offset 44.62 feet RT relative to CL of East Faries Parkway. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(1). COC sampling parameters: pH.
- Station 304 + 22.52 & offset 66.42 feet LT to Station 306 + 03.53 & offset 1.51 feet LT relative to CL of Jug Handle road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(1). COC sampling parameters: Iron, Manganese, pH.
- Station 306 + 05.83 & offset 27.61 feet RT to Station 307 + 04.80 & offset 115.37 feet RT relative to CL of Jug Handle road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Benzo(a)pyrene.
- Station 305 +94.49 & offset 70.08 feet LT to Station 307 + 07.82 & offset 28.52 feet LT relative to CL of Jug Handle road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Chromium, Lead, TCLP Lead, Cobalt, Iron, TCLP Iron, Manganese, TCLP Manganese, Benzo(a)pyrene, pH.
- Station 222 + 58.18 & offset 62.62 feet RT to Station 224 + 03.75 & offset 83.12 feet RT relative to CL of East Faries Parkway. The Engineer has determined this material

meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: pH.

- Station 230 + 10.56 & offset 50.85 feet LT to Station 232 + 35.63 & offset 60.88 feet RT relative to CL of East Faries Parkway. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Benzo(a)pyrene; Iron.
- Station 607 + 58.58 & offset 29.14 feet RT to Station 607 + 60.56 & offset 30.87 feet LT relative to CL of Logan Street. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(b). COC sampling parameters: iron, pH.
- Station 404 + 50.92 & offset 71.03 feet RT to Station 405 + 90.30 & offset 51.29 feet LT relative to CL of James Street. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(b). COC sampling parameters: iron, pH.

Additional information on the above sites collected during the regulated substances due-diligence process is available through the City of Decatur Division of Public Works.

Pay Items. In accordance with Section 669.16, the following pay items are anticipated for the site.

SOIL DISPOSAL ANALYSIS
NON-SPECIAL WASTE DISPOSAL
SPECIAL WASTE PLANS AND REPORTS (SPECIAL)
REGULATED SUBSTANCES PRE-CONSTRUCTION REPORT
REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT
REGULATED SUBSTANCES MONITORING

CHANGEABLE MESSAGE SIGNS

This work consists of furnishing, installation, maintenance, and removal of Changeable Message Signs as directed by the Engineer, in accordance with Section 701 of the Standard Specifications, and as herein specified.

The Changeable Message Signs to be installed under this item are to be used as advanced notification of the impending work. The Engineer will determine the messages to be displayed. Four (4) Changeable Message Signs will be required for this project, one for each approach to the project at Brush College Rd and East Faries Pkwy. The Engineer will determine the exact locations of the Changeable Message Signs.

The Changeable Message Signs shall be in place a minimum of the 14 days directly prior to the commencement of work that requires a lane closure, unless approved by the Engineer. Delays caused by failure to provide the required notice shall not be considered justification for a change in the working days allowed on the contract.

This work will be paid for at the contract unit price per CAL DAY for CHANGEABLE MESSAGE SIGNS. The maximum pay for this pay item is 14 calendar days per message sign. If the contractor delays their start date the message signs shall remain in place until lane closures are necessary and no payment will be made for any days beyond the 14 day maximum.

ELECTRIC UTILITY SERVICE CONNECTION

Description. This item shall consist of payment for work performed by the electric utility 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 the electric utility. The Contractor shall coordinate his work fully with the electric utility 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 the electric utility that 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 electric utility for service. In the event of delay by the electric utility, 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 the electric utility 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 $15,000

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.

Designers Note: The estimate of cost of service connections for bidding purposes shall be provided by the Designer or Design Consultant.

UNDERGROUND CONDUIT

Description. This work shall consist of furnishing and installing a conduit of the type and size specified, in accordance with Section 810 of the Standard Specifications except as described herein.

General Requirements. When PVC is specified, the substitution of Coilable Nonmetallic Conduit, in accordance with Article 1088.01 (c), in place of the PVC conduit of the size and type specified in the plans is permitted with no change in compensation for this item.

When PVC Conduit is required to be spliced to steel conduit sections, a heavy wall set screw connector with a PVC female adapter shall be installed and sealed by duct seal and plastic tape.

A ¼" polypropylene pull rope shall be installed in all conduit runs exceeding 20 feet. A minimum of 2 feet of rope shall be provided at each end of a conduit run

Method of Measurement. UNDERGROUND CONDUIT shall be measured per foot as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per FOOT, for UNDERGROUND CONDUIT, of the size and type specified.

HANDHOLE / DOUBLE HANDHOLE

Description. This work shall consist of furnishing and installing a handhole or double handhole in accordance with Section 814 and Articles 1088.05 of the Standard Specifications except as described herein.

General Requirements. The frame and cover shall be constructed of a polymer concrete and reinforced with a heavy-weave fiberglass cloth. The nominal dimensions of the handhole shall be a minimum 17" (W) c 30" (L) x 36" (D) and the nominal dimensions of the double handhole shall be a minimum 30" (W) x 48" (L) x 36" (D).

The cover shall contain the legend "Traffic Signals" and shall be held down by two stainless steel hex head bolts. The cover shall contain 2 recessed lift pins. The cover for a double handhole shall be a split lid, two-piece cover. All covers shall be rated a minimum of tier 22.

Method of Measurement. HANDHOLE / DOUBLE HANDHOLE shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid will be paid for at the contract unit price, per EACH, for HANDHOLE / DOUBLE HANDHOLE.

ROADWAY LUMINAIRE, LED

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

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

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

1. Descriptive literature and catalogue cuts for luminaire, LED driver, and surge protection device. Completed manufacturer's luminaire ordering form with the full catalog number provided

2. LED drive current, total luminaire input wattage and total luminaire current at the system operating voltage or voltage range and ambient temperature of 25 C.

3. LED efficacy per luminaire expressed in lumens per watt (l/w).

4. Initial delivered lumens at the specified color temperature, drive current, and ambient temperature.

5. IES file associated with each submitted luminaire in the IES LM-63 format.

6. Computer photometric calculation reports as specified and in the luminaire performance table.

7. TM-15 BUG rating report.

8. Isofootcandle chart with max candela point and half candela trace indicated.

9. Documentation of manufacturers experience and verification that luminaires were assembled in the U.S.A. as specified.

10. Written warranty.

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

a. TM-21 calculator spreadsheet (XLSX or PDF format) and if available, TM-28 report for the specified luminaire or luminaire family. Both reports shall be for 50,000 hours at an ambient temperature of 77 °F (25 °C).

b. LM-79 report with National Voluntary Laboratory Accreditation Program (NVLAP) current at the time of testing in PDF format inclusive of the following: isofootcandle diagram with half candela contour and

maximum candela point; polar plots through maximum plane and maximum cone; coefficient of utilization graph; candela table; and spectral distribution graph and chromaticity diagram.

c. LM-80 report for the specified LED package in PDF format and if available, LM-84 report for the specified luminaire or luminaire family in PDF format. Both reports shall be conducted by a laboratory with NVLAP certification current at the time of testing.

d. AGi32 calculation file matching the submittal package.

e. In Situ Temperature Measurement Test (ISTMT) report for the specified luminaire or luminaire family in PDF format.

f. Vibration test report in accordance with ANSI C136.31 in PDF format.

g. ASTM B117/ASTM D1654 (neutral salt spray) test and sample evaluation report in PDF format.

h. ASTM G154 (ASTM D523) gloss test report in PDF format.

i. LED drive current, total luminaire input wattage, and current over the operating voltage range at an ambient temperature of 77 °F (25 °C).

j. Power factor (pf) and total harmonic distortion (THD) at maximum and minimum supply and at nominal voltage for the dimmed states of 70%, 50%, and 30% full power.

k. Ingress protection (IP) test reports, conducted according to ANSI C136.25 requirements, for the driver and optical assembly in PDF format.

l. Installation, maintenance, and cleaning instructions in PDF format, including recommendations on periodic cleaning methods.

m. Documentation in PDF format that the reporting laboratory is certified to perform the required tests.

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

Manufacturer Experience.

The luminaire shall be designed to be incorporated into a lighting system with an expected 20 year lifetime. The luminaire manufacturer shall have a minimum of 33 years' experience manufacturing HID roadway luminaires and shall have a minimum of seven (7) years' experience manufacturing LED roadway luminaires. The manufacturer shall have a minimum of 25,000 total LED roadway luminaires installed on a minimum of 100 separate installations, all within the U.S.A.

Housing.

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

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

The finish shall have a rating of six or greater according to ASTM D1654, Section 8.0 Procedure A – Evaluation of Rust Creepage for Scribed Samples after exposure to1000 hours of testing according to ASTM B117 for painted or finished surfaces under environmental exposure.

The luminaire finish shall have less than or equal to 30% reduction of gloss according to ASTM D523 after exposure of 500 hours to ASTM G154 Cycle 6 QUV® accelerated weathering testing.

The luminaire shall slip-fit on a mounting arm with a 2" diameter tenon (2.375" outer diameter), and shall have a barrier to limit the amount of insertion. The slip fitter clamp shall utilize four (4) bolts to clamp to the tenon arm. The luminaire shall be provided with a leveling surface and shall be capable of being tilted ±5 degrees from the axis of attachment in 2.5 degree increments and rotated to any degree with respect to the supporting arm.

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

The effective projected area of the luminaire shall not exceed 1.6 sq. ft.

The total weight including accessories, shall not exceed 40 lb (18.14 kg). If the weight of the luminaire is less than 20 lb (9.07 kg), weight shall be added to the mounting arm or a supplemental vibration damper installed as approved by the Engineer.

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

The luminaire shall include a fully prewired, 7-pin twist lock ANSI C136.41-compliant receptacle. Unused pins shall be connected as directed by the Manufacturer and as approved by the Engineer. A shorting cap shall be provided with the luminaire that is compliant with ANSI C136.10.

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

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

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

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

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

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

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

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

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

Driver.

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

The driver shall incorporate the use of thermal foldback circuitry to reduce output current under abnormal driver case temperature conditions and shall be rated for a lifetime of 100,000 hours at an ambient temperature exposure of 77 °F (25 °C) to the luminaire. If the driver has a thermal shut down feature, it shall not turn off the LEDs when operated at 104 °F (40 °C) or less.

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

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

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

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

LED Optical Assembly

The optical assembly shall have an IP66 or higher rating in accordance with ANSI C136.25. The circuiting of the LED array shall be designed to minimize the effect of individual LED failures on the operation of other LEDs. All optical components shall be made of glass or a UV stabilized, non-yellowing material.

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

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

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

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

Photometric Performance.

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

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

The luminaire shall have a BUG rating of Back Light B3 or less, Up Light rating of U0, and a Glare rating of G3 or less unless otherwise indicated in the luminaire performance table.

Photometric Calculations.

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

Complete point-by-point luminance and veiling luminance calculations as well as listings of all indicated averages and ratios as applicable shall be provided in accordance with IESNA RP-8 recommendations. Lighting calculations shall be performed using AGi32 software with all luminance calculations performed to one decimal place (i.e. x.x cd/m2). Uniformity ratios shall also be calculated to one decimal place (i.e. x.x:1). Calculation results shall demonstrate that the submitted luminaire meets the lighting metrics specified in the project Luminaire Performance Table(s). Values shall be rounded to the number of significant digits indicated in the luminaire performance table(s).

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

IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE
ROADWAY LIGHTING

GIVEN CONDITIONS

ROADWAY DATA	Pavement Width	48	(ft)
	Number of Lanes	4	
	Median Width	4	
	I.E.S. Surface Classification	R3	
	Q-Zero Value	.07	
LIGHT POLE DATA	Mounting Height	40	(ft)
	Mast Arm Length	12	(ft)
	Pole Set-Back From Edge Of Pavement	3-varies	(ft)
LUMINAIRE DATA	Lumens	19,500 lumens	
	BUG Rating	B3 – U0 – G3 (Max)	
	I.E.S. Vertical Distribution	Medium	
	I.E.S. Lateral Distribution	Type 3	
	Total Light Loss Factor	0.70	
LAYOUT DATA	Spacing	200	(ft)
	Configuration	Opposite	
	Luminaire Overhang over EOP	9 (ft)	

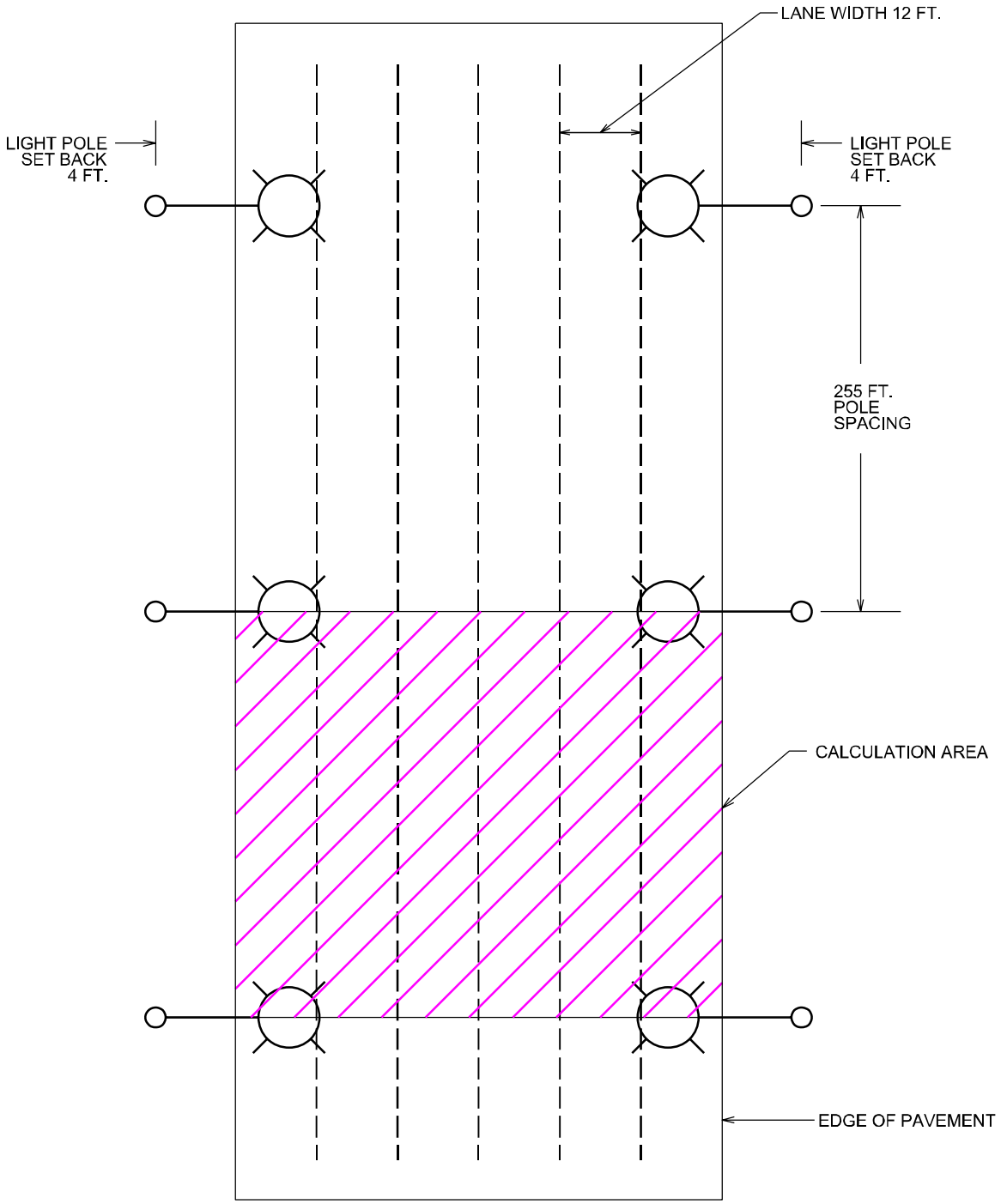
NOTE: Variations from the above specified I.E.S. distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

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

ROADWAY LUMINANCE	Average Luminance, L_{AVE}	1.2	Cd/m^2 (Max)
		.9	Cd/m^2 (Min)
	Uniformity Ratio, L_{AVE}/L_{MIN}	3:1	(Max)
	Uniformity Ratio, L_{MAX}/L_{MIN}	5:1	(Max)
	Veiling Luminance Ratio, L_V/L_{AVE}	0.3:1	(Max)

LIGHT POLE LAYOUT
6 LANE OPPOSITE



Independent Testing

When a contract has 30 or more luminaires of the same type (distribution type and lumen output/wattage), that luminaire type shall be independently tested, unless otherwise noted. The quantity of luminaires to be tested shall be as specified in the following table.

Contract Quantity	Luminaires to be Tested
1-29	0 (unless otherwise noted)
30-80	2
81-130	3
131-180	4
181-230	5
231-280	6
281-330	7

Testing is not required for temporary lighting luminaires.

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

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

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

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

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

The testing performed shall include photometric and electrical testing.

Photometric testing shall be according to IES recommendations, performed with a goniophotometer and as a minimum, shall yield an isofootcandle chart, with max candela point and half candela trace indicated, an isocandela diagram, maximum planned and maximum cone

plots of candela, a candlepower table (House and street side), a coefficient of utilization chart, a luminous flux distribution table, BUG rating report, and complete calculations based on specified requirements and test results.

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

Two copies of the summary report and the test results including IES photometric files (including CDROM) shall be certified by the test laboratory and shall be sent by certified mail directly to the Engineer.

To: District Engineer
Attn: Bureau Chief of Traffic Operations
Illinois Department of transportation
201 West center Ct.
Schaumburg, IL 60196

The package shall state “luminaire test reports” and the contract number clearly.

A copy of this material shall be sent to the Contractor and the Resident Engineer at the same time.

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

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

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

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

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

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

Installation.

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

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

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

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

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

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

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

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

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

Warranty.

The entire luminaire and all of its component parts shall be covered by a 10-year warranty. Failure is when one or more of the following occur:

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

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

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

Method of Measurement.

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

Designation Type	Minimum Initial Luminous Flux
A	2,200
B	3,150
C	4,400
D	6,300
E	9,450
F	12,500
G	15,500
H	25,200
I	47,250
J	63,300
K	80,000+

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

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

FULL-ACTUATED CONTROLLER AND CABINET

Description. This work shall consist of furnishing and installing a full-actuated controller and cabinet of the type specified, in accordance with Section 857 and Articles 1073.01 and 1074.03 of the Standard Specifications except as described herein.

General Requirements. This shall include a copy of the latest version of software for programing the controller. Software shall be installed on the department's laptop. This shall also include any necessary cables that connect the laptop to the installed controller.

Method of Measurement. FULL-ACTUATED CONTROLLER AND CABINET shall be measured per each unit completed and installed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price for EACH for FULL-ACTUATED CONTROLLER AND CABINET, of the type specified.

UNINTERRUPTABLE POWER SUPPLY

Description. This work shall consist of furnishing and installing an uninterruptable power supply, in accordance with Section 862 and Article 1074.04 of the Standard Specifications except as described herein.

General Requirements. The cabinet shall have minimum dimensions of 48” tall, 16’ wide, and 16” deep.

The cabinet shall be mounted to the side of the traffic signal cabinet and shall contain the UPS module, transfer switches, and the batteries.

Method of Measurement. UNINTERRUPTABLE POWER SUPPLY shall be measured per each unit completed of the type and construction shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for UNINTERRUPTABLE POWER SUPPLY, of the type specified.

TRAFFIC SIGNAL EQUIPMENT

Description. The traffic signal equipment furnished for this contract shall be Eagle Brand in accordance with the proprietary letter between the State of Illinois and the City of Decatur dated March 14, 2014.

General Requirements.

TRAFFIC SIGNAL POST

This work shall consist of furnishing and installing a traffic signal post of the type and length specified, in accordance with Sections 875 and 1077.01 of the Standard Specifications except as described herein.

The base of the post shall have a thread less collar which extends above the threads on top of the base and adds one inch to its overall height. The collar shall be an integral part of the casting. Prior to assembly, the contractor shall apply anti-seize compound to the threads of the post and base.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for TRAFFIC SIGNAL POST, of the type and length specified.

ELECTRIC CABLE IN CONDUIT

Description. This work shall consist of furnishing and installing electric cable in conduit in accordance with Sections 873 and 1076.04 of the Standard Specifications except as described herein.

General Requirements. The conductors shall be solid copper.

Method of Measurement. ELECTRIC CABLE IN CONDUIT shall be measured per foot of the type, size and number of conductors specified.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for ELECTRIC CABLE IN CONDUIT, of the type, size, and number of conductors specified.

STEEL COMBINATION MAST ARM ASSEMBLY AND POLE

Description. This work shall consist of furnishing and installing a steel combination mast arm of the length specified, in accordance with Section 877 of the Standard Specifications and Standard 877011 except as described herein.

General Requirements. The height of the luminaire installation shall be reduced from 45 feet to 35 feet.

The davit arm shall be 15 feet in length.

Method of Measurement. STEEL COMBINATION MAST ARM ASSEMBLY AND POLE shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, of the type and length specified.

SIGNAL HEAD, POLYCARBONATE LED HEADS

Description. This work shall consist of furnishing and installing polycarbonate signal heads of the type specified, in accordance with Section 880 of the Standard Specifications except as modified herein.

General Requirements. The polycarbonate heads provided for this project shall have the terminal compartment for two-way, post mounted signal heads on top of the post in accordance with Standard 880006.

Method of Measurement. POLYCARBONATE SIGNAL HEADS shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for SIGNAL HEAD, POLYCARBONATE, LED HEADS of the type specified.

PEDESTRIAN PUSH-BUTTON

Description. This work shall consist of furnishing and installing pedestrian push-buttons of the type specified in accordance with Section 888 and Article 1074.02 of the Standard Specifications except as modified herein.

General Requirements. The push-buttons shall meet ADA requirements. All pedestrian push-buttons shall have a case and be equipped with a 2" diameter button for easy access. The push-buttons shall have a yellow housing and utilize a solid-state switch or reed relay. The following model is approved within the District: Polara Bulldog model BDSP-010 or approved equal.

The pedestrian push-button shall be in a modular station assembly accommodating the two different sizes of signs listed below. The push-button will be part of the modular station with a four-hole mount round cover assembly. The modular stations assemblies shall be the Pelco models SE-2132-12 P4HLED and SE-2132-15-P4HLED both yellow in color or approved equal.

The pedestrian push-button installation shall include all crossing signs and hardware required to mount the pedestrian push-button. All hardware shall be of stainless-steel construction. All bolts shall be Hex Head and no self tapping/drilling screws will be allowed. Anti-seize paste shall be installed on all fasteners.

All signs for pedestrian push-buttons shall be MUTCD sign R10-3e. All signs **shall not** be digitally printed.

Method of Measurement. PEDESTRIAN PUSH-BUTTON shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for PEDESTRIAN PUSH-BUTTON.

TEMPORARY TRAFFIC SIGNAL INSTALLATION

This work shall consist of furnishing, installing, maintaining, and removing a temporary traffic signal installation in accordance with Section 890 of the Standard Specifications except as described herein.

The installation shall include the wood poles, electrical cable, signal heads, backplates, span wire, tether wire, vehicle detection, interconnect to the railroad bungalows, and all associated hardware to complete the installation.

The Emergency Fire Station Pre-Emption will be wired into the temporary signals and be functional during construction.

The traffic signal cabinet and controller shall be according to NEMA standards for Traffic Control Systems.

The vehicle detection shall be a microwave-based motion or video detection used to detect vehicles, motorcycles, and bicycles. It shall be capable of sending a signal representative of a loop type detector in a presence mode to a traffic controller device. The sensor shall operate in the field under harsh environments and shall be immune to the effects of weather, sun rays, night problems and headlight glare. It shall not be necessary to mount any hardware in the roadway. The sensor shall be immune to all privacy issues.

All temporary traffic signal installations shall have vehicular detection installed as shown on the plans or as directed by the Engineer. Microwave vehicle sensors or video vehicle detection shall be approved by the City of Decatur prior to Contractor furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the microwave vehicle sensor or video vehicle detection in accordance to the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the microwave vehicle sensor or video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project.

This work will be paid for at the contract unit price EACH for TEMPORARY TRAFFIC SIGNAL INSTALLATION.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

Description. This work shall consist of the removal of existing traffic signal equipment and the existing controller cabinet and its contents at Brush College Rd and East Faries Pkwy, in accordance with Section 895 of the Standard Specifications except as described herein. The list of removal items is listed in the plans.

The following salvaged items removed shall become the property of the City of Decatur. Items shall be delivered to the City of Decatur (2600 North Jasper St, Decatur, IL 62526). The contractor shall contact the City to arrange for delivery of said items.

- All traffic controllers
- Master controller
- Traffic signal cabinet
- Dual Mast Arm assembly

All remaining salvaged items removed shall become the property of the Contractor.

Basis of Payment. This work will be paid for at the contract unit price EACH for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT.

REMOVE EXISTING DOUBLE HANDHOLE

Add the following to Article 895.05 of the Standard Specifications.

Description.
The existing double handhole which is to be removed and is to become the property of the Contractor shall be disposed of at the Contractor's expense. This work shall include all of the necessary work to remove the existing double handholes from the ground and to restore the existing pavement or ground to match the adjacent conditions at the site. Holes created should be filled or barricaded immediately to prevent safety hazards.

Basis of Payment. This work shall be paid for at the contract unit price, per each, for REMOVE EXISTING DOUBLE HANDHOLE, of the type indicated on the plans, which price shall include all work, excavation, materials, all equipment and labor required to complete the work as specified and to restore the existing ground or pavement.

HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4”

Description. This work shall consist of the furnishing, placing and compacting hot-mix asphalt driveway pavement at the locations and thickness specified on the plans, as directed by the Engineer, and according to applicable portions of the Standard Specifications. The HMA driveway pavement shall consist of the HMA surface and binder as specified in the plans.

This work shall be performed according to Article 406.06 of the Standard Specifications. Bituminous Materials (Prime Coat) shall be applied in accordance with Article 406.05(b)(2) of the Standard Specifications. The HMA driveway pavement shall be constructed on a granular base.

Basis of Payment. This work will be paid for at the contract unit price per square yard for HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4”. BITUMINOUS MATERIALS (PRIME COAT) and AGGREGATE BASE COURSE, TYPE A 8” will be paid for separately.

HOT-MIX ASPHALT DRIVEWAY PAVEMENT REMOVAL

Description. This work consists of furnishing equipment, labor, tools and materials necessary for the removal and satisfactory disposal of all existing bituminous driveways in accordance with the applicable requirements of Section 440 of the Standard Specifications for Road and Bridge Construction except as follows:

This work shall include complete removal of the existing hot-mix asphalt driveway, its base course, and excavation to the proposed subgrade elevation as shown in the Plans. Excavation and grading for the proposed aggregate base course improvement for the full width of the proposed driveway shall be performed in accordance with Section 202 of the Standard Specification except that earth excavation will not be paid for separately but shall be included in the cost of HOT-MIX ASPHALT DRIVEWAY PAVEMENT REMOVAL.

Method of Measurement and Basis of Payment. This item shall be paid for at the contract unit price per SQ YD for HOT-MIX ASPHALT DRIVEWAY PAVEMENT REMOVAL. This cost shall include removal and disposal of the existing hot-mix asphalt driveway pavement composition, base course, and subgrade materials to the final aggregate base course elevation required to construct the proposed surfaces.

BUILDING REMOVAL - CASE III (FRIABLE ASBESTOS ABATEMENT) (BDE)

Effective: September 1, 1990
Revised: April 1, 2010

Building Removal: This work shall consist of the removal and disposal of 9 building(s), together with all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate or existing grade in the area and also all incidental and collateral work necessary to complete the removal of the building(s) in a manner approved by the Engineer. Any holes, such as basements, shall be filled with a suitable granular material. The building(s) are identified as follows:

Bldg. No.	Parcel No.	Location	Description
1	13-08-102-001	1880 N. Brush College Rd.	Commercial Property
2	13-08-101-004	1940 N. Brush College Rd.	Commercial Property
3	13-08-101-013	1980 N. Brush College Rd.	Commercial Property
4	13-08-101-002	3915 E. Faries Pkwy.	Commercial Property
5	13-08-101-006	3925 E. Faries Pkwy.	Commercial Property
6	13-08-101-009	3941 E. Faries Pkwy.	Commercial Property
7	13-08-101-011	4147 E. Faries Pkwy.	Commercial Property
8	13-08-101-011	4147 E. Faries Pkwy.	Commercial Property
9	13-08-101-013	1980 N. Brush College Rd.	Commercial Property

Discontinuance of Utilities: The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the City, County, or utility companies involved. The Contractor shall disconnect and seal, in an approved manner, all service outlets that serve any building(s) he/she is to remove.

Signs: Immediately upon execution of the contract and prior to the wrecking of any structures, the Contractor shall be required to paint or stencil, in contrasting colors of an oil base paint, on all four sides of each residence and two opposite sides of other structures, the following sign:

PROPERTY ACQUIRED FOR
HIGHWAY CONSTRUCTION
TO BE DEMOLISHED BY THE

VANDALS WILL BE PROSECUTED

The signs shall be positioned in a prominent location on the structure so that they can be easily seen and read and at a sufficient height to prevent defacing. The Contractor shall not paint signs nor start demolition of any building(s) prior to the time that the State becomes the owner of the respective building(s).

All friable asbestos shall be removed from the building(s) prior to demolition. Refer to the Special Provisions titled “Asbestos Abatement (General Conditions)” and “Removal and Disposal of Friable Asbestos Building No. 1, 2, 3, 4, 5, 6, 7, 8 & 9“ contained herein.

Basis of Payment: This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL, numbers as listed above, which price shall be payment in full for complete removal of the buildings and structures, including any necessary backfilling material as specified herein.

The lump sum unit price(s) for this work shall represent the cost of demolition and disposal assuming all friable asbestos has been removed prior to demolition. Any salvage value shall be reflected in the contract unit price for this item.

EXPLANATION OF BIDDING TERMS: Two separate contract unit price items have been established for the removal of each building. They are:

1. BUILDING REMOVAL NO. 1, 2, 3, 4, 5, 6, 7, 8 & 9
2. REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. 1, 2, 3, 4, 5, 6, 7, 8 & 9

ASBESTOS ABATEMENT (GENERAL CONDITIONS): This work consists of the removal and disposal of friable asbestos from the building(s) to be demolished. All work shall be done according to the requirements of the U.S. Environmental Protection Agency (USEPA), the Illinois Environmental Protection Agency (IEPA), the Occupational Safety and Health Administration (OSHA), the Special Provision for "Removal and Disposal of Friable Asbestos, Building No. 1, 2, 3, 4, 5, 6, 7, 8 & 9" and as outlined herein.

Sketches indicating the location of Asbestos Containing Material (ACM) are included in the proposal on pages ## thru ##. Also refer to the Materials Description Table on page ## for a brief description and location of the various materials. Also included is a Materials Quantities Table on page . This table states the ACM is friable and gives the approximate quantity. The quantities are given only for information and it shall be the Contractor's responsibility to determine the exact quantities prior to submitting his/her bid.

The work involved in the removal and disposal of friable asbestos shall be performed by a Contractor or Sub-Contractor prequalified with the Illinois Capital Development Board.

The Contractor shall provide a shipping manifest, similar to the one shown on page ##, to the Engineer for the disposal of all ACM wastes.

Permits: The Contractor shall apply for permit(s) in compliance with applicable regulations of the Illinois Environmental Protection Agency. Any and all other permits required by other federal, state, or local agencies for carrying on the work shall be the responsibility of the Contractor. Copies of these permits shall be sent to the district office and the Engineer.

Notifications: The "Demolition/Renovation Notice" form, which can be obtained from the IEPA office, shall be completed and submitted to the address listed below at least ten days prior to commencement of any asbestos removal or demolition activity. Separate notices shall be sent for the asbestos removal work and the building demolition.

Asbestos Demolition/Renovation Coordinator
Illinois Environmental Protection Agency
Division of Air Pollution Control
P. O. Box 19276
Springfield, Illinois 62794-9276

Notices shall be updated if there is a change in the starting date or the amount of asbestos changes by more than 20 percent.

Submittals:

A. All submittals and notices shall be made to the Engineer except where otherwise specified herein.
B. Submittals that shall be made prior to start of work:
    1. Submittals required under Asbestos Abatement Experience.
    2. Submit documentation indicating that all employees have had medical examinations and instruction on the hazards of asbestos exposure, on use and fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures as specified in Worker Protection Procedures.
    3. Submit manufacturer's certification stating that vacuums, ventilation equipment, and other equipment required to contain airborne fibers conform to ANSI 29.2.
    4. Submit to the Engineer the brand name, manufacturer, and specification of all sealants or surfactants to be used. Testing under existing conditions will be required at the direction of the Engineer.
    5. Submit proof that all required permits, site locations, and arrangements for transport and disposal of asbestos-containing or asbestos-contaminated materials, supplies, and the like have been obtained (i.e., a letter of authorization to utilize designated landfill).
    6. Submit a list of penalties, including liquidated damages, incurred through noncompliance with asbestos abatement project specifications.
    7. Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination units, the sequencing of work, the respiratory protection plan to be used during this work, a site safety plan, a disposal plan including the location of an approved disposal site, and a detailed description of the methods to be used to control pollution. The plan shall be submitted to the Engineer prior to the start of work.
    8. 8. Submit proof of written notification and compliance with the “Notifications” paragraph.
C. Submittals that shall be made upon completion of abatement work:
    1. Submit copies of all waste chain-of-custodies, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area;
    2. Submit daily copies of work site entry logbooks with information on worker and visitor access;
    3. Submit logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls; and
    4. Submit results of any bulk material analysis and air sampling data collected during the course of the abatement including results of any on-site testing by any federal, state, or local agency.

<u>Certificate of Insurance:</u>

A. The Contractor shall document general liability insurance for personal injury, occupational disease and sickness or death, and property damage.

B. The Contractor shall document current Workmen's Compensation Insurance coverage.
C. The Contractor shall supply insurance certificates as specified by the Department.

Asbestos Abatement Experience:

A. Company Experience: Prior to starting work, the Contractor shall supply evidence that he/she has been prequalified with the Illinois Capital Development Board and that he/she has been included on the Illinois Department of Public Health's list of approved Contractors.
B. Personnel Experience:
    1. For Superintendent, the Contractor shall supply:
        a. Evidence of knowledge of applicable regulations in safety and environmental protection is required as well as training in asbestos abatement as evidenced by the successful completion of a training course in supervision of asbestos abatement as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to the Engineer prior to the start of work.
        b. Documentation of experience with abatement work in a supervisory position as evidenced through supervising at least two asbestos abatement projects; provide names, contact, phone number, and locations of two projects in which the individual(s) has worked in a supervisory capacity.
    2. For workers involved in the removal of asbestos, the Contractor shall provide training as evidenced by the participation and successful completion of an accredited training course for asbestos abatement workers as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to all employees who will be working on this project.

ABATEMENT AIR MONITORING: The Contractor shall comply with the following:

A. Personal Monitoring: All personal monitoring shall be conducted per specifications listed in OSHA regulation, Title 29, Code of Federal Regulation 1926.58. All area sampling shall be conducted according to 40 CFR Part 763.90. All air monitoring equipment shall be calibrated and maintained in proper operating condition. Excursion limits will be monitored daily. Personal monitoring is the responsibility of the Contractor. Additional personal samples may be required by the Engineer at any time during the project.
B. Contained Work Areas for Removal of Friable Asbestos: Area samples shall be collected for the department within the work area daily. A minimum of one sample shall be taken outside of the abatement area removal operations. The Engineer will also have the option to require additional personal samples and/or clearance samples during this type of work.
C. Air Monitoring Professional
    1. All air sampling will be conducted by a qualified Air Sampling Professional supplied by the Contractor. The Air Sampling Professional shall submit

documentation of successful completion of the National Institute for Occupational Safety and Health (NIOSH) course #582 - "Sampling and Evaluating Airborne Asbestos Dust".

2. Air sampling will be conducted according to NIOSH Method 7400. The results of these tests shall be provided to the Engineer within 24 hours of the collection of air samples.

REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. 1, 2, 3, 4, 5, 6, 7, 8 & 9: This work consists of the removal and disposal of all friable asbestos from the building(s) prior to demolition. The work shall be done according to the Special Provision titled “Asbestos Abatement (General Conditions)” and as outlined herein.

This work will be paid for at the contract unit price per lump sum for REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. 1, 2, 3, 4, 5, 6, 7, 8 & 9, as shown.

BUILDING REMOVAL - CASE IV (NO ASBESTOS) (BDE)

Effective: September 1, 1990
Revised: April 1, 2010

Building Removal: This work shall consist of the removal and disposal of 1 building, together with all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate or existing grade in the area and also all incidental and collateral work necessary to complete the removal of the building(s) in a manner approved by the Engineer. Any holes, such as basements, shall be filled with a suitable granular material. The building(s) are identified as follows:

Bldg. No.	Parcel No.	Location	Description
10	13-08-101-013	1980 N.Brush College Rd.	Commercial Property - Warehouse

Discontinuance of Utilities: The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the City, County, or utility companies involved. The Contractor shall disconnect and seal, in an approved manner, all service outlets that serve any building(s) he/she is to remove.

Signs: Immediately upon execution of the contract and prior to the wrecking of any structures, the Contractor shall be required to paint or stencil, in contrasting colors of an oil base paint, on all four sides of each residence and two opposite sides of other structures, the following sign:

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The signs shall be positioned in a prominent location on the structure so that they can be easily seen and read and at a sufficient height to prevent defacing. The Contractor shall not paint signs nor start demolition of any building(s) prior to the time that the State becomes the owner of the respective building(s).

Basis of Payment: This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL, numbers as listed above, which price shall be payment in full for complete removal of the buildings and structures, including any necessary backfilling material as specified herein.

The lump sum unit price(s) for this work shall represent the cost of demolition. Any salvage value shall be reflected in the contract unit price for this item.
Notifications: The "Demolition/Renovation Notice" form, which can be obtained from the IEPA office, shall be completed and submitted to the address listed below at least ten days prior to commencement of any demolition activity.

Asbestos Demolition/Renovation Coordinator
Illinois Environmental Protection Agency
Division of Air Pollution Control
P. O. Box 19276
Springfield, Illinois 62794-9276
(217)785-1743

Notices shall be updated if there is a change in the starting date or the amount of asbestos changes by more than 20 percent.

Submittals:

A. All submittals and notices shall be made to the Engineer except where otherwise specified herein.
B. Prior to starting work, the Contractor shall submit proof of written notification and compliance with the “Notifications” paragraph.

DEBRIS REMOVAL

This work shall consist of the complete removal and satisfactory disposal of debris located on the subject parcels that are to be removed as described herein, the applicable portions of Section 202 of the Standard Specifications and as directed by the Engineer.

The following is a general list of items, estimated amount and location of debris to be removed.

The Contractor shall note the list is not all-inclusive and there might be additional items that must be removed as part of this contract. Any debris items removed that are not listed below will not be paid for separately but shall be included in the lump sum unit price for DEBRIS REMOVAL:

DEBRIS REMOVAL TABLE

DESCRIPTION	LOCATION								
	1	2	3	4	5	6	7	8	9/10
Metal Post		1							
Landscaping Retaining Wall Rocks									2
Parking stop		4							
Garbage Bin	3						1		
Picnic Tables	2						1		
Shed							1		
Landscaping Knee Wall Blocks / Bench Multiple			1						
Metal Container		1							
Business Sign Removal	2		1						
Bollards	5	2	17						

CLEANING EXISTING DRAINAGE STRUCTURES

Description. All existing storm sewers, pipe culverts, manholes, catch basins and inlets shall be considered as drainage structures insofar as the interpretation of this Special Provision is concerned. When specified for payment, the location of drainage structures to be cleaned will be shown on the plans.

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

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

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

FENCE REMOVAL

Description. This work includes the removal and disposal the existing fence, regardless of material type and height, including rails and posts at the locations shown on the plans and as directed by the Engineer that conflict with the proposed improvements. The limits of removal must be marked and measured for payment by the Engineer prior to removal. The Contractor at his/her expense shall repair any fence damaged or property damaged outside the removal limits.

The fence shall be removed from the posts and posts completely removed, and all materials disposed of outside the limits of the Right-of-Way in accordance with all State and Federal solid waste disposal laws. The hole from the removal of the post and foundation shall be filled with coarse aggregate gradation CA-6.

For areas of fence to remain in place, the terminations and supports shall be constructed in accordance with the applicable Section 664 or 665 of the Standard Specifications and as directed in Standard 664001 or 665001 and as direct by the Engineer.

Method of Measurement. This work shall be measured for payment per lineal foot of fence removed.

Basis of Payment. This work will be paid for at the contact unit price per FOOT for FENCE REMOVAL or CHAIN LINK FENCE REMOVAL, which price shall include the full compensation for all removal and off-site disposal of fencing, post, fabric, barbed wire, foundation and hardware, backfilling holes, labor, equipment and materials required for performing the work as herein specified and detailed on the plans.

TEMPORARY INFORMATION SIGNING

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

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

	Item	Article/Section
a.)	Sign Base (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 REQUIRMENTS

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

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.

LUMINAIRE SAFETY CABLE ASSEMBLY

Description. This item shall consist of providing a luminaire safety cable assembly for all roadway luminaires.

Materials. Materials shall be according to the following:

Wire Rope. Cables (wire rope) shall be manufactured from Type 304 or Type 316 stainless steel having a maximum carbon content of 0.08 % and shall be a stranded assembly. Cables shall be 3.18 mm (0.125”) diameter, 7x19 Class strand core and shall have no strand joints or strand splices.

Cables shall be manufactured and listed for compliance with Federal Specification RR-W-410 and Mil-DTL-83420.

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

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

CONSTRUCTION REQUIREMENTS.

General. The safety cable assembly shall be installed as indicated in the plan details. One end of the cable assembly shall have a loop fabricated from a stainless steel compression sleeve. The other end of the cable assembly shall be connected with stainless steel wire rope clips as indicated. Slack shall be kept to a minimum to prevent the luminaire from creeping off the end of the mast arm.

Method of Measurement. LUMINAIRE SAFETY CABLE ASSEMBLY shall be measured per each of the type and size shown on the plans.

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

PRESSURE CONNECTION

Description. This work shall consist of all labor, material and equipment required to perform a pressure connection (or hot tap) to connect the proposed water main to the existing main at locations indicated on the Plans or directed by the Engineer. It shall be performed in accordance with applicable portions of the Standard Specifications for Water and Sewer Main Construction in Illinois and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

General Requirements. The work shall include all equipment necessary to make the pressure connection. Any fittings, sleeves, piping, valves, or any other appurtenances required for the connection, shall be included. The City shall be notified a minimum 48 hours prior to the planned water connection. No water main shutdown or disruption will be allowable during the connection. The actual sequence of construction installation shall be discussed and scheduled at a pre-construction meeting with the Contractor, Engineer and the City.

It shall be the responsibility of the Contractor to verify that flow rates and pressures in the existing water main are within acceptable ranges for the tapping operation and shall coordinate required adjustments with the City of Decatur and the Engineer. Contractor shall power wire brush and grind the exterior of the main to remove any debris, corrosion deposits, or other surface irregularities that might interfere with proper seating and sealing of each tapping fitting against each main. Any structural defects in main, service connections, appurtenances, adjacent utilities, etc., that could interfere with the installation of the tapping fitting or equipment shall be immediately reported to Engineer.

The sleeve shall be full sleeve, Mueller H-304, Ford Meter Box FTSAS, or Engineer approved equal stainless steel tapping sleeve rated for 150 psi (minimum) working pressure. Provide a stainless steel flanged outlet with a stainless steel test plug, nuts, bolts, and washers.

Tapping valve shall be AWWA, MJxFlanged, meeting all applicable requirements of the WATER VALVE specification, including a full-size unobstructed waterway capable of passing a full-sized shell cutter equal to the nominal diameter of the tapping valve, and meeting all manufacturer requirements of a tapping valve.

Contractor shall pour a minimum of 12-inches of concrete under the tapping sleeve for structural support of the valve, sleeve, and piping. This material shall be paid by CONCRETE THRUST BLOCK (SPECIAL). Pressure connections are to be made by a qualified subcontractor. Subcontractor shall have a minimum of 10 years' experience performing hot taps, and shall have recent, direct experience performing hot taps on the size and type of pipeline being tapped. The tapping procedure, sequence and schedule shall be submitted for approval to the Engineer. Pressure connections will be performed under the supervision of the City.

Method of Measurement. The work will be measured for payment in place for each pressure connection, at the specified size, made to an existing water main.

Basis of Payment. This item shall be paid for at the contract unit price per EACH for PRESSURE CONNECTION, of the size specified, which shall be payment in full for all labor, equipment, materials, and all other work required to complete the installation of the water main connection including pipe, tapping valve, fittings, sleeve, excavation, shoring, trench backfill and all appurtenances necessary for a complete installation.

CONCRETE THRUST BLOCKS (SPECIAL) shall be paid for separately.

RAILROAD PROTECTIVE LIABILITY INSURANCE (BDE)

Effective: January 1, 2006

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications, except the limits shall be a minimum of $5,000,000 combined single limit per occurrence for bodily injury liability and property damage liability with an aggregate limit of $10,000,000 over the life of the policy. A separate policy is required for each railroad unless otherwise noted.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
Norfolk Southern 1735 East Condit Street Decatur, IL 62521	-0-	18 trains/day@ 10 mph

DOT/AAR No.: 328516E RR Mile Post: 43.60
RR Division: Southern Region RR Sub-Division: Chicago District

For Freight Information Contact: Scott Overbey Phone: 404-582-5588
For Insurance Information Contact: Scott Overbey Phone: 404-582-5588

Illinois Central Railroad Company And Its Parents 17641 S. Ashland Ave Homewood, IL 60430-1345	-0-	12 trains/day @ 10 mph

DOT/AAR No.: 291386B RR Mile Post: *29.00*
RR Division: Illinois RR Sub-Division: Lafayette

For Freight Information Contact: Nick Burwell Phone: 319-236-9205
For Insurance Information Contact: Nick Burwell Phone: 319-236-9205

Approval of Insurance. The original and one certified copy of each required policy shall be submitted to the following address for approval:

Illinois Department of Transportation
Bureau of Design and Environment
2300 South Dirksen Parkway, Room 326
Springfield, Illinois 62764

The Contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Engineer evidence that the required insurance has been approved by the railroad(s). The Contractor shall also provide the Engineer with the expiration date of each required policy.

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability

Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

80157

PROTECTING OR RESETTING SURVEY MARKERS

Description. This work shall consist of protecting or resetting existing survey markers and existing survey marker vaults at the locations shown on the plans and as described in section 105.09 and 107.20 of the standard specifications. Survey markers may consist of property corners, section corners, subsection corners, or existing permanent survey markers.

Construction Requirements. All the existing survey markers listed in the plans or discovered in the field shall be documented and cross-tied by an Illinois Professional Land Surveyor prior to the start of work. Existing survey marker vaults shall be adjusted so the cover is ¼" below the final pavement elevation.

Property Corners, Section Corners, and Subsection Corners. For those to be reset outside the paved surface, a 5/8 inch diameter by minimum 30 inch long reinforcement bar and a 1-7/8 inch minimum diameter cap shall be installed. The cap shall be a corrosion-resistant aluminum survey cap of a design compatible with the reinforcement bar for a solid, tight fit after installation. The cap shall be marked as appropriate and shall also display the license number of the Illinois Professional Land Surveyor.

For those to be reset within the paved surface, a rebar and cap shall be installed in a hole cored into the paved surface. A survey marker vault shall be installed according to District 7 Detail No. Z0070202 and the associated special provision.

As required, a new monument record shall be prepared and filed in the appropriate county court house for all government corners in accordance with Illinois Statutes, Chapter 765 ILCS Section 220 "Land Survey Monuments Act" and a recorded copy sent to the District 7 Chief of Surveys.

Permanent Survey Markers. Permanent survey markers to be reset shall be in accordance with Section 667 of the Standard Specifications and as shown on Highway Standard 667101.

Basis of Payment. The work for protecting or resetting survey markers shall be paid for at the contract unit price per each for PROTECTING OR RESETTING SURVEY MARKERS, which price shall include hiring an Illinois Professional Land Surveyor, and providing the labor and equipment necessary to protect or reset survey markers and to adjust existing vaults.

The work for furnishing and installing new survey marker vaults will be paid for according to the survey marker vault special provision.

STORM SEWERS

Description: This work shall consist of constructing storm sewers and shall be performed in accordance with Section 550 of the Standard Specifications, except has modified herein.

General Requirements: Storm sewer will be of the type shown on the plans. If it is determined in the field the required separation between water and storm sewer cannot met due to differences in assumed utility locations, Storm Sewer meeting the criteria of the provision STORM SEWER (WATER MAIN QUALITY PIPE) must be provided. If a change in storm sewer type is required, the Contractor will be paid, at the unit price for the material supplied.

All proposed grades are subject to change depending on utility conflicts. There will be no additional compensation for investigating depths of existing utilities.

Testing shall be as required in section 550 of the "Standard Specifications for Road and Bridge Construction" and in accordance with the plans and as provided below. Contractor shall provide televised inspection (CCTV) as specified here-in the special provisions. Pipe installation shall be free of defects and inflow and infiltration. Any defects of inflow or infiltration shall be repaired prior to
acceptance at no cost to the owner.

The second sentence of the fourth paragraph of Article 550.07 of the Standard Specifications shall be revised as follows:

The backfill material shall consist of suitable excavated material from the trench, trench backfill or controlled low-strength material (CLSM) as herein specified.

The following shall be added to the fifth paragraph of Article 550.07 of the Standard Specifications:

For trenches made in the subgrade of the proposed Brush College Road or Faries Parkway pavement and trenches where the inner edge of trench is within 2 feet of the proposed Brush College Road or Faries Parkway edge of pavement or curb and gutter, the backfill material shall be CLSM as shown on the drainage schedules. The CLSM shall be placed accordance with the requirements for CONTROLLED LOW-STRENGTH MATERIAL, SPECIAL.

Basis of Payment. This work will be paid for at the contract unit price per ft for STORM SEWER of the type and size specified, which price shall include all labor, equipment and materials necessary to complete the work.

CLSM will be measured and paid for in accordance with CONTROLLED LOW-STRENGTH MATERIAL.

Televising the storm sewer shall be paid for separately.

STORM SEWERS JACKED IN PLACE

This work shall be in accordance with Section 552 of the Standard Specifications and this Special Provision. A metal liner (casing pipe) shall be jacked in place first, then the storm sewer installed inside the liner. The casing pipe shall meet the following minimum requirements:

Material – Steel ASTM A-36 or AWWA C-206
Inside Diameter – 28" for 15" RC pipe, 38" for 24" pipe (contractor to verify clearance for carrier pipe selected)
Wall Thickness (min) – .438" (28" casing), .562" (38" casing).
Manufacture – Rolled/Welded
Grade – FY = 36 KSI minimum
Joints – welded
The carrier pipe shall be reinforced concrete pipe, Class A, Type 4, 15" (NS Spur) and reinforced concrete pipe, Class A, Type 4 , 24" (IC). Carrier pipe shall be rubber gasket type type joint suitable for jacking.
The following Railroad (Shall be considered as either NS or IC depending on the line crossed) requirements shall also apply:

Jacking (Steel Pipe)

A. This method consists of pushing sections of pipe into position with jacks placed against a backstop and excavation performed by hand from within the jacking shield at the head of the pipe.

B. Jacking shall be in accordance with the current American Railway Engineering Association Specifications, Chapter 1, Part 4 "Jacking Culvert Pipe Through Fills." This operation shall be conducted without hand-mining ahead of the pipe and without the use of any type of boring, auguring, or drilling equipment.

C. Bracing and backstops shall be so designed and jacks of sufficient rating used so that the jacking can be progressed on a 24-hour basis without stoppage (except for adding lengths of pipe) until the leading edge of the pipe has reached the receiving pit.

D. Immediately upon completion of jacking operation, the installation shall be pressure grouted as per this specification.

Grouting

A. For jacked and tunneled installations a uniform mixture of 1:6 (cement:sand) cement grout shall be placed under pressure through the grout holes to fill any voids which exist between the pipe or liner plate and the undisturbed earth.

B. Grouting shall start at the lowest hole in each grout panel and proceed upwards simultaneously on both sides of the pipe.

C. A threaded plug shall be installed in each grout hole as the grouting is completed in that hole.

Soil Stabilization

A. Pressure grouting of the soils or freezing of the soils before jacking, boring, or tunneling may be required at the direction of Railroad to stabilize the soils, control water, prevent loss of material and prevent settlement or displacement of embankment. Grout shall be cement, chemical or other special injection material selected to accomplish the necessary stabilization.

B. The materials to be used and the method of injection shall be prepared by a Registered Professional Soils Engineer or by an experienced and qualified company specializing in this work and submitted for approval to Railroad before the start of work. Proof of experience and competency shall accompany the submission.

Dewatering

A. When water is known or expected to be encountered, pumps of sufficient capacity to handle the flow shall be maintained at the site, provided the contractor has received approval from NS to operate them. Pumps in operation shall be constantly attended on a 24-hour basis until, in the sole judgment of Railroad, the operation can be safely halted. When dewatering, close observation shall be maintained to detect any settlement or displacement of railroad embankment, tracks, and facilities.

Safety Requirements

A. All operations shall be conducted so as not to interfere with, interrupt, or endanger the operation of trains nor damage, destroy, or endanger the integrity of railroad facilities. All work on or near Railroad property shall be conducted in accordance with Railroad safety rules and regulations. The Contractor shall secure and comply with the Railroad safety rules and shall give written acknowledgement to NS that they have been received, read, and understood by the Contractor and its employees. Operations will be subject to Railroad inspection at any and all times.

B. All cranes, lifts, or other equipment that will be operated in the vicinity of the railroads' electrification and power transmission facilities shall be electrically grounded as directed by Railroad.

C. At all times when the work is being progressed, a field supervisor for the work with no less than 12 months experience in the operation of the equipment being used shall be present. If boring equipment or similar machines are being used, the machine operator also shall have no less than 12 months experience in the operation of the equipment being used.

D. Whenever equipment or personnel are working closer than 15 ft (4.6 m) from the centerline of an adjacent rack, that track shall be considered as being obstructed. Insofar as possible, all operations shall be conducted no less than this distance. Operations closer than 15 ft (4.6) from the centerline of a track shall be conducted only with the permission of, and as directed by, a duly qualified Railroad employee present at the site of the work.

E. Crossing of tracks at grade by equipment and personnel is prohibited except by prior arrangement with, and as directed by, Railroad.

Blasting

A. Blasting will not be permitted.

Protection of Drainage Facilities

A. If, in the course of construction, it may be necessary to block a ditch, pipe or other drainage facility, temporary pipes, ditches or other drainage facilities shall be installed to maintain adequate drainage, as approved by Railroad. Upon completion of the work, the temporary facilities shall be removed and the permanent facilities restored.

B. Soil erosion methods shall be used to protect railroad ditches and other drainage facilities during construction on and adjacent to Railroad right-of-way.

Support of Excavation Adjacent to Track

1.0 Launching and Receiving Pits

A. The location and dimensions of all pits or excavations shall be shown on the plans. The distance from centerline of adjacent track to face of pit or excavation shall be clearly labeled. Also, the elevation of the bottom of the pit or excavation must be shown on the profile.

B. The face of all pits shall be located a minimum of 25 ft (7.6 m) from centerline of adjacent track, **measured at right angles to track**, unless otherwise approved by Railroad.

C. If the bottom of the pit excavation intersects the theoretical railroad embankment line interlocking steel sheet piling, driven prior to excavation, must be used to protect the track stability. The use of trench boxes or similar devices are not acceptable in this area.

D. Design plans and computations for the pits, stamped by a Professional Engineer, must be submitted by the Contractor prior to start of construction. The Contractor shall obtain Railroad approval prior to beginning any work on or which may affect Railroad property.

E. The sheeting shall be designed to support all lateral forces caused by the earth, railroad and other surcharge loads.

F. After construction and backfilling, all sheet piling within 10 ft (3.0 m) of centerline track must be cut off 18 in. (457 mm) below final grade and left in place.

G. All excavated areas are to be illuminated (flashing warning lights not permitted), fenced and otherwise protected as directed by Railroad.

2.0 Parallel Trenching and Other Excavation

A. When excavation for a pipeline or other structure will be within the theoretical railroad embankment line of an adjacent track, interlocking steel sheet piling will be required to protect the track.

B. The design and construction requirements for this construction shall be in accordance with the requirements of Section 5.9.1.

2.0 Inspection and Testing

A. For pipelines carrying flammable or hazardous materials, ANSI Codes, current at time of constructing the pipeline, shall govern the inspection and testing of the facility on Railroad property, except as follows:

(1) One hundred percent of all field welds shall be inspected by radiographic examinations, and such field welds shall be inspected for 100 percent of the circumference.

(2) The proof testing of the strength of carrier pipe shall be in accordance with ANSI requirements.

4.0 Reimbursement of Railroad Costs

A. All Railroad costs associated with the pipe installation (inspection, flagging, track work, protection of signal cables, etc.) will be reimbursed by the Department.

The Contractor shall follow all of the requirements contained in the for the specific railroad involved.

Soil borings have been included in the contract documents for the Contractor's review. The Contractor is advised to review the site and familiarize himself with the soil conditions prior to finalizing his bid for this portion of the work. No additional compensation shall be allowed for changes in the construction method due to ground conditions that may exist at the time of construction.

The Contractor should be aware of the possibility of existing utilities at boring and jacking locations. The Contractor shall field verify the elevations and locations of any and all utilities that may cross beneath or over the proposed sewer prior to beginning the jacking operation so as not to damage the existing utilities during jacking operations. No additional compensation shall be given for any modifications required to be made to the proposed sewer design or for any delay time incurred due to a difference in assumed and actual elevations of the existing utilities.

The Contractor shall take all necessary precautions to prevent the undermining of the roadways, railroads, structures, embankments, or property including the utilization of trench boxes, sheeting, etc. to properly maintain the jacking and receiving pit excavations such that underlying soils between the pavement edge/back of curb and the jacking limits are prevented from entering the excavation. In the event that settlement or any other damage occurs to adjacent roadways, railroad, property, utilities or structures, the Contractor shall be fully responsible for any repairs deemed necessary by the Engineer.

Any temporary soil retention system required to support jacking and receiving pit excavation shall be designed and constructed by the Contractor and reviewed by the Engineer. The design calculations and details for the temporary soil retention system proposed by the Contractor shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer. This approval will not relieve the Contractor of responsibility for the safety of the excavation. Approval shall be contingent upon acceptance by all involved utilities and/or Railroads.

Any temporary soil retention system installation and subsequent removal shall consider the adjacent paved surfaces and buildings. Any measurable settlement or heave, as determined by the Engineer, of adjacent pavements shall be repaired at no additional cost to the Contract.

All excavated areas are to be illuminated with flashing warning lights and shall be fenced throughout the time the pits are excavated. This work shall be incidental to this item. Any storm sewer that is subsequently installed in the area formerly occupied by the jacking or receiving pits shall be installed and backfilled in accordance with the storm sewer special provisions and details. The remainder of the jacking and receiving pit areas shall be backfilled to the finished grade with either suitable excavated material from the pit or backfilled in accordance to the storm sewer special provisions and details. The backfill material shall be placed in 6 inch lifts, loose measurements, and compacted by mechanical tamper of a type approved by the Engineer before the next layer is placed, and the backfill shall be compacted to not less than 95% of the maximum dry density as determined by ASTM D1557. All backfill material shall be deposited in such a manner as not to damage the pipe. The filling of pit shall be carried on simultaneously on both sides of the pipe.

Any temporary support or bracing of existing utilities must be coordinated with the affected utilities and is included under this item.

All required work for excavating, temporary soil retention system installation and removal, shoring, dewatering, stabilization and backfilling of the jacking and receiving pits is included under this item.

Basis of Payment: This work will be paid for at the contract unit price per ft for STORM SEWERS JACKED IN PLACE (SPECIAL), of size specified, which price shall include the storm sewer pipe, casing pipe and end plates, grouting all voids between the storm sewer and metal liner, removing and backfilling of jacking and receiving pits, temporary soil retention systems, preparation of shop drawing submittals, temporary support or bracing of excavations and existing utilities, excavations to confirm locations of adjacent existing utilities, and dewatering, sheeting, bracing all other materials and equipment necessary to install the storm sewer and all excavation except excavation in rock. Installation and subsequent removal of required temporary soil retention systems shall not be paid separately but shall be considered included with this work.

STORM SEWERS, (WATER MAIN QUALITY PIPE)

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

General Requirements: Storm sewer will be of the type shown on the plans. If it is determined in the field the required separation cannot met due to differences in assumed utility locations Storm Sewer meeting the criteria of this provision must be provided. If a change in storm sewer type is required, the Contractor will be paid, at the unit price for the material supplied.

All proposed grades are subject to change depending on utility conflicts. There will be no additional compensation for investigating depths of existing utilities.

Testing shall be as required in section 550 of the “Standard Specifications for Road and Bridge Construction” and in accordance with the plans and as provided below. Contractor shall provide televised inspection (CCTV) as specified here-in the special provisions. Pipe installation shall be free of defects and inflow and infiltration. Any defects of inflow or infiltration shall be repaired prior to
acceptance at no cost to the owner.

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

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

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

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

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

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

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

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

Concrete Pressure Pipe

Concrete pressure pipe shall conform to the latest ANSI/AWWA C300, C301, C302, or C303.

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

Ductile Iron Pipe

Ductile Iron pipe shall conform to ANSI A 21.51 (AWWA C151), class or thickness designed per ANSI A 21,50 (AWWA C150), tar (seal) coated and/or cement lined per ANSI A 21.4 (AWWA C104), with a mechanical or rubber ring (slip seal or push on) joints.

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

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

Plastic Pipe

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

Polyvinyl Chloride (PVC) conforming to ASTM Standard D 1785. Schedule 80 is the minimum required for all pipe sizes, except when the pipe is to be threaded, and then it shall be Schedule 120. It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

Polyvinyl Chloride (PVC) conforming to ASTM D 2241. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM f 441. A minimum of Schedule 80 is required for all pipe sizes. Threaded joints are not allowed. It shall be made from CPVC compound meeting ASTM D 1784, Class 23447.

Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM F 442. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from CPVC compound meeting ASTM D 1784.
Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C900. A minimum of wall thickness of DR 25 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C905. A minimum of wall thickness of DR 26 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

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

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

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

Basis of Payment: This work shall be measured and paid for at the contract unit price per linear FOOT for STORM SEWER (WATER MAIN QUALITY PIPE) of the size and type specified.

Televising the storm sewer shall be paid for separately.

TEMPORARY PAVEMENT

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

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

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

The removal of the Temporary Pavement shall conform to Section 440 of the Standard Specification.

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

Basis of Payment. This work will be paid for at the contract unit price per square yard (square meter) for TEMPORARY PAVEMENT.

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

SELECTIVE CLEARING

Selective Clearing shall consist of the removal of logs, shrubs, bushes, saplings, grass, weeds, other vegetation and stumps of a diameter less than 6 in. (150 mm) at locations designated by the Engineer.

Care shall be taken to direct work activity away from and protecting desirable trees, shrubs, turf, and herbaceous plants within the project area.

Repair or replacement of existing plant material damaged by the Contractor shall consist of restoring to original condition specific plant material that was designated to be saved within the limits of construction or restoring plant material outside the limits of construction that was damaged by the Contractor.

Additional grading and shaping of disturbed areas shall be performed in advance of the seeding operation(s), as deemed necessary by the Engineer and shall be considered incidental to the Selective Clearing pay item.

The work will be paid for at the contract unit price per Acre for SELECTIVE CLEARING which price shall include all materials, equipment and labor necessary to complete the work as specified.

STEEL CASINGS

Description. This work shall consist of jacking and boring (or augur jacking, the terms shall be considered interchangeable) a steel casing pipe at the location, line and grades provided on the plans or as directed by the engineer. The Contractor shall field verify the elevations and locations of any and all utilities that may cross beneath or over the proposed auger prior to beginning the auger operation so as not to damage any existing utilities during auger operations. Contractor will not be paid for jacking and boring work that is performed but must be subsequently abandoned due to conflicts with existing utilities.

The Contractor shall take all necessary precautions to prevent the undermining of the roadways, railroads, structures, embankments, or property including the utilization of trench boxes, sheeting, etc. to properly maintain the auger and receiving pit excavations such that underlying soils between the pavement edge/back of curb and the auger limits are prevented from entering the excavation. In the event that settlement or any other damage occurs to adjacent roadways, railroad, property, utilities or structures, the Contractor shall be fully responsible for any repairs deemed necessary by the Engineer.

The Contractor is advised to review the site and familiarize himself with the soil conditions (see soil borings in contract documents) prior to finalizing his bid for this portion of the work. No additional compensation shall be allowed for changes in the construction method due to ground conditions that may exist at the time of construction.

General Requirements. This work shall consist of the construction of steel casing pipe at the locations indicated in the Plans or as directed by the Engineer and shall conform to the Contract and the applicable sections of the City of Decatur Standard Specifications for Water Main Construction.

After installation of the casing pipe is completed, the proposed water main shall be constructed in place within the casing.

All required work for excavating, temporary soil retention system installation and removal, shoring, dewatering, stabilization and backfilling of the jacking and receiving pits is included under this item.

The annular spaces between the casing pipe and the carrier pipe and between the casing pipe and the bored soil interface shall be as indicated in the Drawings.

Casing pipe thicknesses shall be as noted in the table below:

Under Roadways		Under Railroads	
Effective O.D. of Casing (Inches)	Wall thickness of Smooth Steel Pipe (Inches).	Effective I.D. of Casing (Inches)	Minimum wall thickness of Smooth Steel (Inches)
30	0.375	30	0.5625
42	0.415	42	0.7000
48	0.500	48	0.7500
Other	As required to meet E80 loading requirements		

The smooth steel pipe shall conform to ASTM A139, Grade B. Hydrostatic shop test of the pipe is not required. Steel plate with yield strength of 36,000 psi (ASTM A-36, A570 Gr. 36) may be used. The pipe ends shall be beveled for field butt welding. All field welding of steel casing pipe shall be done in accordance with AWWA C206, "Field Welding of Steel Water Pipe".

After the pipeline has been installed in the cased tunnel, and before completion of pressure and leakage testing of the main, the annular space between the casing and main shall be filled completely with cellular foam concrete (or other approved material) pumped into place meeting ACI 523.3R code and at each end of the tunnel shall be closed with a twelve (12”) inch thick brick bulkhead.

Any temporary soil retention system required to support jacking and receiving pit excavation shall be designed and constructed by the Contractor and reviewed by the Engineer. The design calculations and details for the temporary soil retention system proposed by the Contractor shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer. This approval will not relieve the Contractor of responsibility for the safety of the excavation. Approval shall be contingent upon acceptance by all involved utilities and/or railroads.

Any temporary soil retention system installation and subsequent removal shall consider the adjacent paved surfaces and buildings. Any measurable settlement or heave, as determined by the Engineer, of adjacent pavements shall be repaired at no additional cost to the Contract.

All excavated areas are to be illuminated with flashing warning lights and shall be fenced throughout the time the pits are excavated. This work shall be incidental to this item. Any water main that is subsequently installed in the area formerly occupied by the jacking or receiving pits shall be installed and backfilled in accordance with the water main specifications, requirements and details. The remainder of the jacking and receiving pit areas shall be backfilled to the finished grade with either suitable excavated material from the pit or backfilled in accordance to the water main construction requirements and details. The backfill material shall be placed in 6 inch lifts, loose measurements, and compacted by mechanical tamper of a type approved by the Engineer before the next layer is placed, and the backfill shall be compacted to not less than 95% of the maximum dry density as determined by ASTM D1557. All backfill material shall be deposited in such a manner as not to damage the pipe. The filling of pit shall be carried on simultaneously on both sides of the pipe. Any temporary support or bracing of existing utilities must be coordinated with the affected
utilities and is included under this item.

Method of Measurement. This work will be measured in feet along the centerline of the casing. Pipe to be installed within the casing will be measured separately.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for STEEL CASINGS, of the diameter specified, and includes all labor, equipment, and materials necessary to complete the work as described, including steel casing pipe and accessories, furnishing, placing, protecting, removing and backfilling of jacking and receiving pits, temporary soil retention systems, preparation of shop drawing submittals, excavation, temporary support or bracing of excavations and existing utilities, excavations to confirm locations of adjacent existing utilities, and dewatering. Installation and subsequent removal of required temporary soil retention systems shall not be paid separately but shall be considered included with this work.

DUCTILE IRON WATER MAIN IN CASING PIPE will be paid for separately.

TEMPORARY TRAFFIC SIGNAL TIMING

Description.
This work shall consist of developing and maintaining appropriate traffic signal timings for the specified intersection for the duration of the temporary signalized condition, as well as impact to existing traffic signal timings caused by detours or other temporary conditions.

All timings and adjustments necessary for this work shall be performed by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for the City of Decatur. 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 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.

SPECIAL EXCAVATION

Description. This work shall consist of special excavation in addition to excavation required for jacking and receiving pits due to unforeseen circumstances (e.g. a previously unknown utility conflict and not shown on the Drawings), when ordered by the Engineer in writing.

General Requirements. Provide additional excavation for both jacking and receiving pits, including all required sheeting, tie-back sheeting, shoring, underpinning, timbering, bracing, steel sheet piling, or other protection measures required for construction, when the proposed casing pipe is required to be installed at an elevation deeper than indicated in the plans. Contractor shall physically verify all utilities and obstructions prior to excavating the jacking and receiving pits. Work shall meet all applicable requirements of STEEL CASINGS, including, but not limited to items such as dewatering, temporary soil retention systems, excavation, compaction, existing utility support, and soil disposal.

Method of Measurement. The work will be measured for payment per cubic yard (CU YD) of additional excavation required at the jacking pit only. The measurement for payment will not include the total vertical lineal foot (VLF) measurement at both the jacking and receiving pits, but measurement shall only be taken at the jacking pit.

Basis of Payment. This work shall be paid for at the contract unit price per CUBIC YARD for SPECIAL EXCAVATION, including all labor, equipment, and materials required for a complete installation.

PROPOSED MANHOLE/CATCH BASIN CONNECTION OVER EXISTING STORM SEWER

Description: This work shall consist of installing a new manhole or catch basin over an existing storm sewer pipe. The work shall be done in accordance with the applicable portions of Sections 502, 550 and 602 of the Standard Specifications. The manhole or catch basin and frame and grate will be paid for separately. The manhole catch basin type and size and type of frame and grate are shown in the plans for each location of this work.

Construction: The Contractor shall carefully remove the existing storm sewer which falls within the structure. After the structure is installed, the void spaces around the pipe openings shall be mortared with a non-shrink concrete grout. Damage to the existing storm sewer pipe to remain shall be repaired by the Contractor at his own expense.

Basis of Payment: The work shall be paid for at the contract unit price each for PROPOSED MANHOLE/CATCH BASIN CONNECTION OVER EXISTING STORM SEWER.

WATER VALVE BOXES TO BE ABANDONED

Description. This work shall consist of the abandonment and/or removal of existing valve boxes that are part of the water main to be abandoned as called out on the plans, at locations shown on the plans, or as directed by the Engineer. The tops of existing valve boxes to be abandoned shall be removed to a minimum elevation of at least 3 inches below the earth subgrade of the proposed improvement. No additional payment will be made for boxes that are required to be completely removed for construction.

General Requirements. This work will be done in accordance with section 605 of the Standard Specifications. The existing valve shall be left in place. All water mains that connect to the valve box shall be securely sealed with Class SI concrete or brick and mortar. After the concrete or mortar has set, the existing structure shall be filled with CLSM or concrete.

Method of Measurement. This work will be measured for payment for each valve box being filled. Valve box removal for fire hydrants will be paid separately, in accordance with REMOVE FIRE HYDRANT AND VALVE ASSEMBLY.

Basis of Payment. This work will be paid for at the contract unit price per EACH as WATER VALVE BOXES TO BE ABANDONED. The unit price shall include all equipment, materials and labor required to perform this work.

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION (TPG)

Effective: August 1, 2012
Revised: February 1, 2014

In addition to the Contractor's equal employment opportunity affirmative action efforts undertaken as elsewhere required by this Contract, the Contractor is encouraged to participate in the incentive program to provide additional on-the-job training to certified graduates of IDOT funded pre-apprenticeship training programs outlined by this Special Provision.

It is the policy of IDOT to fund IDOT pre-apprenticeship training programs throughout Illinois to provide training and skill-improvement opportunities to assure the increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The intent of this IDOT Training Program Graduate (TPG) Special Provision is to place certified graduates of these IDOT funded pre-apprentice training programs on IDOT project sites when feasible, and provide the graduates with meaningful on-the-job training intended to lead to journey-level employment. IDOT and its sub-recipients, in carrying out the responsibilities of a state contract, shall determine which construction contracts shall include "Training Program Graduate Special Provisions." To benefit from the incentives to encourage the participation in the additional on-the-job training under this Training Program Graduate Special Provision, the Contractor shall make every reasonable effort to employ certified graduates of IDOT funded Pre-apprenticeship Training Programs to the extent such persons are available within a reasonable recruitment area.

Participation pursuant to IDOT's requirements by the Contractor or subcontractor in this Training Program Graduate (TPG) Special Provision entitles the Contractor or subcontractor to be reimbursed at $15.00 per hour for training given a certified TPG on this contract. As approved by the Department, reimbursement will be made for training persons as specified herein. This reimbursement will be made even though the Contractor or subcontractor may receive additional training program funds from other sources for other trainees, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving other reimbursement. For purposes of this Special Provision the Contractor is not relieved of requirements under applicable federal law, the Illinois Prevailing Wage Act, and is not eligible for other training fund reimbursements in addition to the Training Program Graduate (TPG) Special Provision reimbursement.

No payment shall be made to the Contractor if the Contractor or subcontractor fails to provide the required training. It is normally expected that a TPG will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project through completion of the contract, so long as training opportunities exist in his work classification or until he has completed his training program. Should the TPG's employment end in advance of the completion of the contract, the Contractor shall promptly notify the designated IDOT staff member under this Special Provision that the TPG's involvement in the contract has ended and supply a written report of the reason for the end of the involvement, the hours completed by the TPG under the Contract and the number of hours for which the incentive payment provided under this Special Provision will be or has been claimed for the TPG.

The Contractor will provide for the maintenance of records and furnish periodic reports documenting its performance under this Special Provision.

Method Of Measurement. The unit of measurement is in hours.

Basis of Payment. This work will be paid for at the contract unit price of $15.00 per hour for 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 2.

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 PreApprenticeship 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.

REMOVE EXISTING VALVE AND VAULT

Description. This work shall consist of removing valve vaults, water valves, piping, and appurtenances at locations indicated on the Plans or directed by the Engineer in accordance with the applicable requirements of Section 605 in the IDOT Standard Specifications and the applicable portions of Section 561 of the Standard Specifications and Section 42 of the Water and Sewer Specification and as modified herein:

General Requirements. All water main shut-downs shall be coordinated with the City of Decatur. At a minimum, the Contractor shall remove the top 3' of the vault, including the lid, frame, cone, barrel, and all appurtenances. The lid and frame shall be salvaged and delivered to the City of Decatur. If required, any water main openings shall be securely sealed.

Excavation and proper disposal of materials required to remove the vault will be included in this work and shall be disposed of per Article 202.03. The bottom of the vault shall be partially broken out before being backfilled and compacted to grade. The remainder of the excavated area shall be backfilled in accordance with Section 208. All work will be included in the cost of the pay item, and no further compensation will be provided.

Method of Measurement. This work shall be measured per each valve vault to be removed.

Basis of Payment. This work shall be paid for at the contract unit price EACH for REMOVE EXISTING VALVE AND VAULT which price shall include removing and properly disposing of the existing structure, pipe sealing, and backfilling and all labor, equipment, and materials necessary to perform said work.

TRENCH BACKFILL will be paid for separately.

TELEVISION INSPECTION OF SEWER

Description. This work consists of providing all labor, equipment, transportation, services and technical competence for performing all operations required to professionally execute the internal inspection of existing and new sewers in a Pipeline Assessment and Certification Program (PACP) format as established by the National Association of Sewer Service Companies (NASSCO) with strict accordance with this specification and the applicable drawings and subject to the terms and conditions of the contract.

Contractor shall televise existing storm sewers, existing culverts, or existing field tile to remain or to be filled at the locations shown on the plans and other locations as directed by the Engineer. The purpose of the televising is to locate and document any blind connections to the storm sewers or condition of pipes or culverts to remain. Existing storm sewers and culverts shall be cleaned prior to televising.

All new storm sewer trunk lines within the project limits as shown on the schedules shall be televised before acceptance. The entire length between manholes of sewer sections shall be televised. If the new sewers are found not to be clean during televising, the Contractor will be required to flush and clean and re-televise said sewers found not to be clean. Unless otherwise specified, sewers must be straight between manholes. They may be tested for straightness by flashing a light from manhole to manhole, lamping, or by other suitable means.

The timing of the televising of new sewer mains is of the utmost importance. No roadway work will be allowed over new sewers until the video records have been viewed and accepted with the approval of the Engineer.

Requirements. Conventional color inspection cameras specifically designed for use in sewer line inspection work shall be utilized. The inspection contractor may be required to submit sample video recordings from recently completed projects demonstrating the picture quality, PACP requirements, and video compatibility to City of Decatur viewing program Granite Net by CUES Inc.

All cameras used shall be color units specifically designed or modified for use in large-diameter sewer inspection work, capable of inspecting up to 1,200 lineal feet of sewer from a single access point. The camera lens shall have not less than a 65-degree viewing angle and shall have either automatic or remote focus and iris controls. The camera shall provide a color recorded image and be equipped with a rotating imaging unit for viewing lateral connections, defects, and other objects discovered in the sewer. In this respect the camera shall have a high-resolution lens capable of spanning a 360-degree circumference and 270 degrees on a horizontal axis. Camera lighting shall be sufficient for use with color inspection cameras. In all cases, the complete video system (cameras, lens, power, lighting, cables, monitors and recorders) shall be capable of providing a picture quality acceptable to the Engineer.

The camera shall be driven through the sewer line at a speed not greater than 30 feet per minute, stopping as necessary to permit proper documentation of the sewer's condition and the precise location of service laterals and blind ties.

Accurate and continuous footage readings shall be superimposed on the video recording for each line inspected by remote inspection methods. Also shown shall be the date of inspection and the manhole number designation for each origin and destination manhole on the sewer line section being inspected.

The Contractor shall be responsible for having the necessary camera equipment available to allow for inspection of the sewer lines covered by this project in a manner acceptable to the Engineer under live flow conditions.

Documentation and Reports. All inspections are required to be in accordance with Pipeline Assessment and Certification Program (PACP) format as established by the National Association of Sewer Service Companies (NASSCO). Contractor shall be certified by NASSCO in the PACP program. The download format and inspections reports shall be compatible with Granite XP, Version 5.4.14 by CUES Inc. All video file naming shall be approved by the Engineer. The file naming is Quarter Section – Upstream Manhole Number _ Quarter Section – Downstream Manhole Number (example: 54-21_54-20). All videos and inspection reports shall become the property of the City of Decatur.

In addition to the video documentation a printed report shall be provided to summarize the observations for each pipe segment. The report shall present the locations and descriptions of the observed conditions and defects, including the following:

1. Service connection locations by station and by clock reference,
2. Service connection type (break-in, factory tees, tap, abandoned)
3. Root infestation generally identified by severity
4. Structural pipe condition, deformation or failure (collapse)
5. Missing pieces of pipe (size and position by clock reference)
6. Pipe crack positions and type (longitudinal, circumferential, multiple)
7. Open joint location and description
8. Offset joint location and severity

Existing Storm Sewer:
If any deficiencies are found in existing system to remain, the Contractor shall either repair or replace the existing storm sewer, existing culvert, and existing field tile as directed by the Engineer. The cost of the repairs or replacement for the existing field tile shall be paid for using pay items included in the contract or in accordance with Article 109.04 of the Standard Specifications. If blind-ties are noted in existing system to be abandoned, the Engineer shall be notified for further disposition prior to abandoning and filling the existing storm sewer.

New Storm Sewer Mains:
If the new sewers inspected are not acceptable, the problems found shall be repaired and the televising repeated until satisfactory. Contractor will be required to make repairs at no additional cost.

After the Contractor has completed any repairs or replacements, the Contractor shall re-televise the storm sewer, culvert or field tile as directed by the Engineer. The Contractor shall provide a new report of the re-televised area. The cost of video inspection of the storm sewers, culverts, or field tile after any repairs or replacements will not be paid for separately and shall be included in the contract unit price for television inspection of sewer.

Method of Measurement. This work will be measure for payment in sewer televising per foot based on the length of the video inspection.

Basis of Payment. This work will be paid for at the contract unit price per foot for TELEVISION INSPECTION OF SEWER regardless of sewer diameter. This price shall include all material, equipment, and labor necessary for the successful televising the storm sewer main and structures including re-televising where necessary.

Storm sewers and culverts to be cleaned shall be paid for separately.

WATER VALVE BOXES TO BE ABANDONED

Description. This work shall consist of the abandonment and/or removal of existing valve boxes that are part of the water main to be abandoned as called out on the plans, at locations shown on the plans, or as directed by the Engineer. The tops of existing valve boxes to be abandoned shall be removed to a minimum elevation of at least 3 inches below the earth subgrade of the proposed improvement and the boxes filled.

General Requirements. This work will be done in accordance with section 605 of the Standard Specifications. The existing valve shall be left in place. The existing valve box to be abandoned in place shall be filled with CLSM or concrete.

Method of Measurement. This work will be measured for payment for each valve box being abandoned. Valve box removal for fire hydrants will be paid separately, in accordance with REMOVE FIRE HYDRANT AND ASSEMBLY.

Basis of Payment. This work will be paid for at the contract unit price per EACH as WATER VALVE BOXES TO BE ABANDONED. The unit price shall include all equipment, materials and labor required to perform this work.

REMOVE FIRE HYDRANT AND VALVE ASSEMBLY

Description. This work shall consist of the complete removal of fire hydrants, auxiliary valves, and valve boxes, piping and all appurtenances from the excavated site at locations indicated on the Plans or directed by the Engineer. The hydrant, auxiliary valve, and valve boxes lid shall be delivered to the City.

General Requirements. This work shall conform to the applicable sections of the Standard Specifications for Water and Sewer Main Construction. The Contractor shall excavate and remove the fire hydrants, auxiliary valves, valve boxes, piping and all appurtenances back to the existing tee and the tee shall be plugged. The Contractor shall backfill the excavation with appropriate backfill, as approved by the Engineer, to the existing grade elevation, unless a new fire hydrant is shown to be installed at this location. Excavation and proper disposal of materials required to remove the hydrant and assembly are included in this work. The plug or cap required to seal the tee is included in this work.

The Contractor is advised that the work will be performed on a potable water system owned and operated by the City of Decatur. As such, all operations shall be performed in such a way as to avoid contamination of the water system through the introduction of contaminants or the process of the work. All work will require the review and approval of the City of Decatur prior to the commencement of work operations.

The water main shutdown required to perform the Work will only be allowed based upon scheduling by the City of Decatur. The Work must be substantially complete in order to place the water main back into service in coordination with the City of Decatur. The construction schedule must clearly indicate when testing of the new water main items will be made and for the water main to be inspected by City of Decatur prior to placing the new water main into service.

Any water main dewatering required during the removal of the fire hydrants shall be considered included as part of the successful removal of the fire hydrants.

Method of Measurement. This work will be measured per each fire hydrant removed. Fire hydrant auxiliary valves, valve boxes, piping and all appurtenances will not be paid for separately but shall be included in this pay item. Salvaging and return of any materials will be considered incidental to this item.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for REMOVE FIRE HYDRANT AND VALVE ASSEMBLY, which price shall include all labor, equipment and material necessary to complete the work as specified herein.

TRENCH BACKFILL will be paid for separately.

ABANDON EXISTING UTILITIES

Description. This work shall consist of the removal of all underground utilities (water service, sanitary service, storm sewer, gas service, electrical service, telephone service, etc.) including pipes and appurtenances between the buildings to be demolished and the main lines.

General. Existing sanitary services shall be abandoned at the main. Sanitary service connections will need to be fully cut out of the City main and a new section of main installed with non-shear mission couplings.

Existing water services shall be abandoned at the main. Water service connections will need to be fully removed and restored with a sleeve. B-boxes shall also be removed.

Existing wells on the property shall be filled.

Basis of payment. This work will be for at the lump sum price for ABANDON EXISTING UTILITIES, which price shall be payment in full for the complete removal of all underground utilities and appurtenances as specified herein.

TEMPORARY SOIL RETENTION SYSTEM (SPECIAL)

This work shall be done in accordance with Section 522 of the Standard Specifications with the additional requirements specified herein.

Shoring Requirements. CN/ICRR zone of influence is defined by 15' from centerline of track measured at 18" below base of rail and sloping 2H:1V. If the excavation falls within the region described (known as zone of influence), CN/ICRR requires shoring and design live load shall be E90. CN/ICRR zone of influence includes any of the excavation from the base of the rail to 18" below base of the rail within 10' from the centerline of the track.

Submittal. To expedite shoring review the following items should be submitted with the review package.

1) Design calculations stamped and signed by Illinois Licensed Structural Engineer
2) Lateral pressure diagram
3) Deflection calculations at top of wall and bracing locations including elastic deflection of the wall and the passive deflection of the resisting soil mass.
4) Drawings or sketches of the proposed shoring consisting of:
    a. Plan view showing wall limits and distances from centerline of track
    b. Cross section showing excavation support system, top of rail elevation, distance from centerline of track to near face of excavation support, maximum excavation depth with elevations, elevation of bracing, tip elevation, etc.
    c. Connection details.
5) Soil report and boring logs

Shoring Design. Design of the Temporary Soil Retention System shall include the following:

1. Excavation support shall be based on AREMA Manual for Railway Engineering, Chapter 8, Section 20 and Section 24.
2. Lateral Pressure from train loads shall be based on Cooper E 90 train load and active earth pressure due to railroad surcharge shall be calculated using the Boussinesq Equation for strip load per AREMA 8-20.3.2.2. Uniform surcharge (q) shall be based on an 8.5 foot long tie, 5 foot axle spacing and 90 kip axle load resulting in q=2.11ksf.
3. All shoring systems must be analyzed for overturning, sliding and global stability.
4. Lateral live load deflection shall be limited to 3/8" for shoring located within 18'-0" of centerline of track and ½" for shoring located outside 18'-0". The maximum allowable vertical or horizontal displacement of rail shall be ¼".
5. Material allowable stresses shall be based on AREMA.
6. No allowable stress increase for temporary loading condition will be allowed.

Method of Measurement. This work will be measured for payment as follows.

The temporary soil retention system furnished and installed will be measured for payment in place, in square feet. The area measured shall be the minimum of vertical exposed surface area envelope of the excavation supported by temporary soil retention system.

Portions of a temporary soil retention system or temporary sheet piling left in place for reuse in later stages of construction will only be measured for payment once.

Basis of Payment. This work will be paid for at the contract unit price per square foot for TEMPORARY SOIL RETENTION SYSTEM (SPECIAL).

MAILBOX REMOVE AND REPLACE

Description. This work shall consist of relocating existing mailboxes located at locations specified on the plans to a suitable alternate location approved by the Engineer and the Postmaster.

Construction Requirements. Contractor shall remove the existing mailbox from its current location and set it in concrete with a minimum depth of 2'-0" below finished grade with a casing diameter of 12" centered about the post.

General Requirements. Should the existing post already be set in a concrete foundation, this pay item shall include removal of the existing 4"x4" post from the mailbox and replacing it with a new post. The existing post and foundation shall be fully excavated and disposed of as part of this item.

Alternatively, if the existing mailbox support post does not allow for replacement with a nominal depth of 2'-0" below grade, the 4"x4" shall be replaced with a new post.

Based on the timing of the Contractor's excavation operations, this mailbox may require placement at one or more temporary locations prior to final placement. These temporary locations do not need to be set in concrete but must be anchored in such a way that it is upright and stable for mail delivery.

Multiple temporary relocations shall not be paid for separately but considered included in the cost of this pay item.

Basis of Payment. This work will be paid for at the contract unit price per EACH for MAILBOX REMOVE AND REPLACE which shall include all time, materials, and labor to complete the excavation and relocation including any/all new wooden support posts, concrete, and material disposals.

NON-PRESSURE CONNECTION TO EXISTING WATER MAIN

Description. This work shall consist of all labor, material and equipment required to connect the proposed water main to the existing main (or cut-in connection) at locations indicated on the Plans or directed by the Engineer. It shall be performed in accordance with applicable portions of Section 41 of the Standard Specifications for Water and Sewer Main Construction in Illinois and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

General Requirements. The work shall include all equipment necessary to make the connection. Any sleeves or other fittings required for the connection, shall be installed and paid for as DUCTILE IRON WATER MAIN FITTINGS. The City shall be notified a minimum 48 hours prior to the planned water disruption. All valves to be closed for the purpose of shutting down the water main shall be performed by the City. A tentative installation schedule of operation shall be submitted to the City 72 hours before any shut down of the water system can be made. The actual sequence of construction installation shall be discussed and scheduled at a pre-construction meeting with the Contractor, Engineer and the City.

Cut-in connections shall be performed only after pressure testing, leakage testing and disinfecting of the new water main has been performed and accepted by the City. Cut-in connections will be performed under the supervision of the City.

All connections with existing mains and adjustments of existing mains and service lines shall be made. Any special fittings, plugs, or similar appurtenances necessary to complete the work shall be furnished by the contractor. Ductile iron water main fittings will be paid in accordance with DUCTILE IRON WATER MAIN FITTINGS. All other appurtenances and couplings shall be at no additional cost to the contract.

Prior to the final connection, all piping and fittings shall be swabbed with a chlorine solution in accordance with AWWA disinfection requirements.

Contractor shall cut and bevel existing pipe in accordance with DIPRA and the manufacturer's installation instructions.

Method of Measurement. The work will be measured for payment in place for EACH non-pressure connection made to an existing water main.

Basis of Payment. This item shall be paid for at the contract unit price per EACH for NON-PRESSURE CONNECTION TO EXISTING WATER MAIN, of the size specified, which shall be payment in full for all labor, equipment, materials, including excavation, shoring, trench backfill and all other work necessary for a complete installation of the water main connection.

CONCRETE THRUST BLOCKS (SPECIAL) and DUCTILE IRON WATER MAIN FITTING shall be paid for separately.

VIDEO DETECTION SYSTEM COMPLETE

Description. This specification sets forth the minimum requirements for a video detection system that detects vehicles, bicycles, and motorcycles on a roadway by processing video images and that provides presence, traffic flow data, event alarms, and full-motion video for real-time traffic control and management systems.

Materials.

System Hardware

The video detection system shall be comprised of two major hardware components: a video sensor and a communications interface panel. An optional wired input/output card shall be available for certain cabinet types.

Video Sensor

The video detection system shall include a video sensor that integrates a high-definition (HD) camera with an embedded processor for analyzing the video performing detection.

Camera and Processor

The camera shall be a color CMOS imaging array.

The camera shall include a minimum 10X optical zoom.

It shall be possible to zoom the lens as required to satisfy across-the-intersection detection objectives, including stop line and advance detection.

It shall be possible to zoom the lens remotely from the TMC for temporary traffic surveillance operations or to inspect the cleanliness of the faceplate.

The camera shall have direct, real-time iris and shutter and speed control by the integrated processor.

The processor shall support H.264 video compression for streaming output.

Video Sensor Enclosure Assembly

The camera and processor shall be housed in a sealed IP-67 enclosure.

The faceplate of the enclosure shall be glass and shall have hydrophilic coating on the exterior surface to reduce debris accumulation and maintenance.

The faceplate shall have a thermostatically-controlled indium tin oxide (ITO) heater applied directly on the interior surface to keep the faceplate clear of condensation, snow, ice and frost.

An adjustable aluminum visor shall shield the faceplate from the sun and extraneous light sources.

An integral aiming sight shall assist in aiming the camera for the detection objectives.

A removable rear cap and cable strain relief shall seal the power connection.

The rear cap shall be tethered to the enclosure to avoid dropping the cap during installation.

The rear cap shall be fastened to the body of the video sensor with single, captive bolt.

The rear cap and enclosure shall include Gore breathers to equalize internal and external pressure.

The sensor shall be self-supporting on manufacturer's mounting brackets for easier fastening during installation.

It shall be possible to rotate the field-of-view 360º without changing the angle of the visor.

Power and Communications

Power and communications for the video sensor shall be carried over a single three-conductor cable.

Termination of the three-conductor cable shall be inside the rear cap of the enclosure on a three-position, removable Phoenix terminal block. Each conductor shall be attached to the Phoenix plug via a screw connection.

The video sensor shall operate normally over an input voltage range of 89 to 265 VAC at 50 or 60 Hz.

Power consumption shall be no more that 16 watts typical

No supplemental surge suppression shall be required outside the cabinet.

All communications to the video sensor shall be broadband-over-power via the same three-conductor cable that powers the unit. Coaxial cable shall not be required.

Communications Interface Panel

The video detection system shall include an interface panel in the traffic cabinet that manages communications between the video sensors, the traffic management center, a maintenance technician, and the traffic cabinet itself.

Video Sensor Connection

The communications interface panel shall provide connection points for four video sensors.

Each sensor connection shall be a 3-pole terminal block, which supplies power and broadband-over-power communications to the sensor.

The broadband-over-power communications shall provide a throughput of 70 to 90 Mbps.

The broadband-over-power connection shall support 1,000 feet of cabling to the video sensor.

Each video sensor connection shall include a power switch.

There shall be an LED for each video sensor to indicate the state of the power to the sensor and an LED for each video sensor to indicate the status of communications.

Each video sensor connection shall contain a resettable fuse.

Each video sensor connection shall provide high-energy transient protection.

Traffic Management Center (TMC) Communications

An Ethernet port shall be provided to connect to a remote Traffic Management Center (TMC).

The TMC connection shall support 10/100/1000 Mbps Ethernet communication.

The communications interface panel shall proxy all network requests that arrive on the TMC connection to avoid unwanted network traffic from reaching the broadband-over-power network between the communications interface panel and the video sensors.

All communications to the video detection system through the TMC connection shall be to a single IP address.

Local User Communications

A wired Ethernet port shall be provided to connect the technician at the cabinet to the video detection system for setup and maintenance purposes.

The maintenance port shall support 10/100/1000 Mbps Ethernet communication.

All communications to the video detection system through the maintenance port shall be to a single IP address.

The maintenance port shall support DHCP to automatically assign an IP address to the user's computer, if desired.

An 802.11g Wi-Fi access point shall allow wireless connection to the video detection system at the cabinet for setup and maintenance purposes.

All communications to the video detection system through the Wi-Fi access point shall be to a single IP Address.

The Wi-Fi access point shall support DHCP to automatically assign an IP Address to the user's computer.

The Wi-Fi access point shall include a dipole, omnidirectional antenna.

A momentary pushbutton shall allow the user to turn the Wi-Fi access point on or off.

The Wi-Fi access point shall turn itself off automatically after a period of inactivity from connected devices.

An LED shall indicate when the Wi-Fi access point is enabled.

The Wi-Fi access point shall operate simultaneously with the wired maintenance port and with the TMC connection.

Traffic Controller Connection

The communications interface panel shall provide one connection to communicate to the traffic controller through the cabinet.

The traffic controller connection shall support a TS2 Type 1 compatible SDLC interface.

The traffic controller connector shall be a 15-pin female metal shell D sub-miniature type connector to support a standard NEMA TS2 or TEES SDLC cable.

The traffic controller connection shall support a protocol interface to SDLC-capable traffic controllers (NEMA or TEES).

The traffic controller connection shall support the NEMA TS2 SDLC protocol to include up to 64 detector outputs and 32 inputs.

The traffic controller connection shall be able to connect to a wired input/output card, which supports wired I/O in cabinets without a SDLC-capable controller.

The wired I/O data communications link shall support at least 24 outputs and 16 inputs.

It shall be possible to connect and use both SDLC communications and communication to the wired input/output card simultaneously.

USB Ports

The communications interface panel shall include two USB 2.0 ports.

If a communications interface panel fails to start and run due to a software or operating system failure, it shall be possible to reinstall all system and application software from a USB memory stick without necessitating removal of the communications interface panel from the cabinet.

Power

The communications interface panel shall accept input voltage in the range of 89-265 VAC, 50/60 Hz power from the transient-protected side of the cabinet.

The communications interface panel shall be protected by two slow blow fuses. Spares shall be attached to the panel.

Wired Input/Output Card

The video detection system shall support an optional wired input/output card that communicates with the communications interface panel for real-time detection states and other I/O to the traffic controller. The card may reside in a standard detector rack or shelf-mount enclosure with power module.

The optional wired input/output card shall comply with the form factor and electrical characteristics to plug directly into a NEMA type C or D detector rack or Caltrans TEES Input File.

The card shall occupy two slots of the detector rack.

The card shall provide four detector outputs on its rear-edge connector.

A front connector shall provide communication to the communications interface panel.

A front connector shall allow 16 inputs and 24 contact-closure detector outputs for wiring into the cabinet.

A front panel LED for each of the 16 inputs and 24 outputs shall indicate the state of the input or output.

The wired input/output card shall support optional expansion cards in other slots. Each expansion card shall support 4 outputs to the back edge of the card.

The wired input/output card shall support optional harnesses for connection to Input Files or C1, C4, C11, and C12 ports to support Type 170 or Type 2070 controllers.

System Software

The video detection system shall include management software for configuration, monitoring and data collection purposes.

Management Software

Management software shall be a Windows-based application.

The software shall be compatible with Windows 7 and Windows 10 operating systems. The software shall communicate with the video detection system via Ethernet.

The management software shall automatically determine all video sensors and communications interface panels available on the local network and populate a list of all devices.

The management software shall provide the user a means to name individual video sensors and communications interface panels.

The management software shall provide a means for the user to zoom the camera optics while viewing a live video stream.

The management software shall provide a means for the user to calibrate distances in the field of view.

The management software shall provide the user a means to create 4-sided detection zones in the field of view using either a still snapshot or live video.

The management software will overlay an outline of each detection zone over the background image.

It shall be possible for the user to place detection zones anywhere in the field of view for stop line detection and/or advance detection.

It shall be possible for the user to set the desired color of both the on and off states of the detection zone overlay.

It shall be possible for the user to alter the size and shape of any previously created zone. It shall be possible for the user to overlap zones, either partially or fully.

It shall be possible for the user to name each zone uniquely.

It shall be possible for the user to assign each zone to detect vehicles, to detect bicycles, or to detect both, and to specify different outputs for each type.

It shall be possible for the user to assign the same output to multiple zones such that the output will be on if any of the zones are detecting a vehicle or bicycle.

It shall be possible for the user to assign a single zone to more than one output such that if a vehicle or bicycle is detected, all the assigned outputs shall be turned on.

The management software shall be capable of creating at least 99 detection zones per video sensor.

It shall be possible for the management software to retrieve all configuration parameters from video sensors or communications interface panels.

It shall be possible for the user to save all the settings for a video sensor or a communications interface panel to a laptop file.

The management software shall provide a means to read or import all the settings from a previously saved configuration file for a video sensor or a communications interface panel.

The management software shall be able to download a new version of the application software into a communications interface panel and its attached video sensors.

The management software shall provide a screen to monitor operation of a video sensor.

The monitoring screen shall include a live video stream from the video sensor with at least HD 1280x720 pixel resolution.

The monitoring screen shall show indications of detection in real time by changing the color of the detection zone.

It shall be possible for the user to configure different indications for vehicle detections vs. bicycle detections when both are configured for the same zone.

The monitoring screen shall include the following optional, configurable objects. It shall be possible for the user to size and position them anywhere on the screen and to change the color and size of text.

An indication of when an output is on or off, along with a user-configurable name for that indicator.

The current time in the video sensor.

A user-configurable title or name.

The version number of the video sensor software.

It shall be possible for the user to turn the overlay graphics on or off with a single setting.

The management software shall provide a screen to monitor operation of the intersection with a quad-view video stream from the communications interface panel.

The quad-view video stream shall have a resolution of at least HD 1280x720 pixels, where each of the sensor videos comprising the quad-view shall be at least 640x360 pixels.

It shall be possible for the user to configure the order that the sensor videos appear in the quad-view.

The real-time quad-view video stream shall be capable of displaying the overlay graphics for all four sensors simultaneously.

While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to request a “snapshot” or single-frame image to save to a named file on a laptop.

While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to record a period of the video to save to a named file on a laptop.

System Functionality

The video detection system shall provide the following features and functionality.

Detection Performance

The video detection system shall detect the presence of vehicles in defined zones and turn on the assigned output when the vehicle is present in the zone.

Stop Line Detection

For detection zones placed at the stop line, the probability of not detecting the presence of a vehicle shall be 1% or less under all operating conditions when the video sensor is installed and configured properly.

For detection zones placed at the stop line, the probability of falsely detecting a vehicle that is not present shall be 3% or less under all operating conditions when the video sensor is installed and configured properly.

Advance Detection

It shall be possible to place advance detector zones such that the farthest point of the zone is up to 600 feet from the video sensor. Advance detector zone placement shall include 2-3 car lengths of field-of-view beyond the farthest point of the zone.

To ensure statistical significance for the above detection performance specifications, the data shall be collected over 24-hour time intervals (so as to avoid a single lighting condition) and will contain a minimum of one hundred (100) vehicles per lane. The calculations of detection performance will not include turning movements where vehicles do not pass through the detectors, vehicle lane-change anomalies, or where they stop short or stop beyond the combined detection zones.

Failsafe Mode

The video detection system shall provide three (3) failsafe options during optical contrast loss.

The default shall be maximum recall. The end-user may choose to use minimum recall or fixed recall in which a user-defined number of seconds may be implemented to hold call during green. The video sensor shall continuously monitor the overall contrast in the video. If the overall contrast falls below a preset level (such as caused by dirty faceplate, severe glare, extreme fog, or temporary ice/snow on the faceplate), the sensor shall enable the chosen failsafe mode. When sufficient contrast is restored in the video, the sensor will exit the failsafe mode.

The communications interface panel shall continuously monitor the connectivity status of the attached video sensors. If any video sensor goes offline due to either electrical failure or internal software failure, the communications interface panel shall enable the failsafe mode for that video sensor. If the video sensor comes back online, failsafe mode shall end.

Data Collection

The video detection system shall automatically collect and store traffic flow data in non-volatile memory for later retrieval and analysis. No additional hardware or software shall be necessary. The data shall include:

Vehicle counts.

Vehicle average speeds.

The management software shall be able to retrieve collected data for a specified period of time or for all currently stored data and save into a standard CSV file.

Operations Log

The communications interface panel and each video sensor shall maintain a time-stamped operations log of routine and special events in non-volatile memory for later retrieval and analysis.

Time Synchronization

The video detection system and management software shall provide three methods to synchronize the time of day clocks in the communication interface panel and the video sensors, as follows:

Manual time synchronization operation by the user, which sets the time to the current time on the laptop where the management software is running.

A configuration setting to allow the communications interface panel to automatically obtain time from the NEMA TS2 protocol on the SDLC channel and broadcast it to the video sensors.

A configuration setting to allow the communications interface panel to automatically obtain time from up to five Network Time Protocol (NTP) sources and broadcast it to the video sensors.

Video Streaming

In addition to the ability to view video streams in the management software, it shall be possible to view video from individual sensors or to view the quad-view from the communications interface panel using a third-party video player application on a tablet, smartphone or laptop computer.

Video bitrate is user-definable between 100 Kbps-5000 Kbps. The default shall be 2048 Kbps. All bitrates shall provide 30 fps.

Installation and Setup

The video detection system hardware shall be designed for flexible, fast and easy installation and setup.

Install the video sensor on a traffic signal post or mast arm, as mentioned above and as shown on the plans, per the applicable portions of Section 880.03 of the Standard Specifications.

No special tools or extra equipment, other than a laptop for configuration, will be required.

Once all hardware is installed, connected and functional, it shall be possible to configure the video detection system for a typical 4-approach, 8-phase intersection in 15 minutes or less.

Warranty, Service and Support

The video detection system shall be provided with the following warranty, service and support options.

Warranty

The manufacturer shall warrant the video detection system for a minimum of three (3) years. An option for up to six (6) years of warranty shall be available.

Service

Ongoing software support by the manufacturer will include software updates of the video sensor, communications interface panel, and management software. These updates will be provided free of charge during the warranty period. The manufacturer will maintain a program for technical support and software updates following expiration of the warranty period. This program will be available to the contracting agency in the form of a separate agreement for continuing support.

Support

A quick-start guide, installation guide, application notes, and other materials shall be available from the manufacturer to assist in product installation and setup for various applications. In addition, training online or in person shall be available.

Training shall be available to personnel of the contracting agency in application design, operation, setup, and maintenance of the video detection system.

Manufacturer shall provide a tech support website and an 800 number for technical support.

Method of Measurement. VIDEO DETECTION SYSTEM COMPLETE shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for VIDEO DETECTION SYSTEM COMPETE.

CONCRETE BARRIER BASE (SPECIAL NO. 1)

Description. This work shall consist of constructing a concrete barrier base with reinforcement bars below a concrete barrier wall as detailed in the plans.

Construction Requirements. This work shall be done in accordance with the applicable portions of Section 637 of the Standard Specifications. The concrete barrier base shall be constructed as detailed in the plans. The concrete barrier wall shall be constructed separately and not poured monolithically with the concrete barrier base.

Method of Measurement. CONCRETE BARRIER BASE (SPECIAL NO. 1) will be measured for payment in feet in place along the centerline of the barrier base. The concrete barrier wall of the type specified will be paid for separately in accordance to the special provision for CONCRETE BARRIER.

Basis of Payment. This work will be paid for at the contract unit price per foot for CONCRETE BARRIER BASE (SPECIAL NO. 1), which price shall include all equipment, labor, and materials necessary to construct the concrete barrier base including all reinforcement bars in the concrete barrier base and those extending into the concrete barrier wall or concrete barrier transition, and epoxy coated tie bars.

CONCRETE BARRIER , VERTICAL FACE (SPECIAL)

Description. This work shall consist of constructing a concrete barrier wall with reinforcement bars as detailed in the plans.

Construction Requirements. This work shall be done in accordance with the applicable portions of Section 637 of the Standard Specifications. The concrete barrier wall shall be constructed on a concrete barrier base as detailed in the plans.

Method of Measurement. Concrete barrier walls shall be measured for payment in feet in place, along the centerline of the concrete barrier. Concrete barrier base will be paid for separately according to CONCRETE BARRIER BASE and CONCRETE BARRIER BASE (SPECIAL NO. 1), per the number indicated on the plans.

Basis of Payment. This work will be paid for at the contract unit price per foot for CONCRETE BARRIER, VERTICAL FACE (SPECIAL) or as shown in the plans. This contract unit price shall include all equipment, labor and materials necessary to construct the concrete barrier wall including all reinforcement bars in the concrete barrier wall.

CONCRETE BARRIER WALL (SPECIAL NO. 1)

Description. This work shall consist of all materials and labor necessary to form and construct the concrete barrier wall along the west side of Brush College Road at the southern end of the project limits as shown on the plans and specified herein.

General Requirements. This work shall follow the requirements in Section 503. Slip forming of the constant slope parapet shape is allowed in accordance with IDOT GBSP 61.

Materials shall be according to the following:

- The concrete shall be Class BS and shall conform to Article 1020.04 of the Standard Specifications.
- Reinforcement shall conform to Section 508 of the Standard Specifications.
- Polyurethane Sealant shall be non-staining gray one component non-sag elastomeric gun grade meeting the requirements of ASTM C-290, Type S, Grade NS. Use T with a 5/8" backer rod.
- The ½" Preformed Self-Expanding Cork Joint Filler shall conform to Article 1051.07 of the Standard Specifications.

Method of Measurement. This work will be measured for payment in place and the length computed in linear feet.

Basis of Payment. This work will be paid for at the contract unit price per linear foot for CONCRETE BARRIER WALL (SPECIAL NO. 1). The unit price shall include the concrete, reinforcement, cork joints, and all labor, tools, equipment and incidentals to complete the work as specified.

CONCRETE BARRIER WALL (SPECIAL NO. 2)

Description. This work shall consist of all materials and labor necessary to form and construct the concrete barrier wall along the east side of Brush College Road at the southern end of the project limits as shown on the plans and specified herein.

General Requirements. This work shall follow the requirements in Section 503. Slip forming of the constant slope parapet shape is allowed in accordance with IDOT GBSP 61.

Materials shall be according to the following:

- The concrete shall be Class BS and shall conform to Article 1020.04 of the Standard Specifications.
- Reinforcement shall conform to Section 508 of the Standard Specifications.
- Polyurethane Sealant shall be non-staining gray one component non-sag elastomeric gun grade meeting the requirements of ASTM C-290, Type S, Grade NS. Use T with a 5/8" backer rod.
- The ½" Preformed Self-Expanding Cork Joint Filler shall conform to Article 1051.07 of the Standard Specifications.

Method of Measurement. This work will be measured for payment in place and the length computed in linear feet.

Basis of Payment. This work will be paid for at the contract unit price per linear foot for CONCRETE BARRIER WALL (SPECIAL NO. 2). The unit price shall include the concrete, reinforcement, cork joints, and all labor, tools, equipment and incidentals to complete the work as specified.

Concrete barrier base will be paid for separately according to CONCRETE BARRIER BASE (SPECIAL NO. 1), per the number indicated on the plans.

STUMP REMOVAL ONLY

Special attention is called to this item since the Contractor will, in this case, be required to remove stumps only and associated surface roots. The trees have previously been removed by others. A tree stump that cuts off at a height of 4.4 feet or below will be considered as a stump for the purposes of measurement and removal. All excess chips and debris from this operation shall be removed from State right-of-way.

This work shall be done in accordance with Section 201 of the Standard Specifications for tree removal, except that stumps are to be removed to a minimum of twelve (12) inches below the natural surface of the ground and surface roots shall be ground out.

Method of Measurement. Stumps to be removed as a payment item will be measured per unit of diameter, where one unit is equal to one (1) inch, at flush with the ground. Surface roots will not be measured for payment but shall be included in the stump removal.

Basis of Payment. Stump removal shall be paid for at the contract unit price per unit diameter for STUMP REMOVAL ONLY. All references to tree removal in the Standard Specifications shall include the item STUMP REMOVAL ONLY. Payment for STUMP REMOVAL ONLY shall include the cost of all material, equipment, labor, removal, disposal, cleanup, and incidentals required to complete the work as specified herein and to the satisfaction of the Engineer.

REMOVE AND RE-INSTALL PIPE CULVERTS

Description: This work shall consist of the satisfactory removal of existing pipe culverts and relaying the pipe culverts on a prepared foundation.

Materials: Materials shall meet the requirements of the following Articles of Section 1000 of the Standard Specifications:

(a) Mastic Joint Sealer for Pipe……1055

Removal: Existing pipe culverts shall be removed so that all pipe and end sections considered suitable for future use by the Engineer shall be salvaged. Any of the material having salvage value which has been damaged by the Contractor shall be replaced by the Contractor at his/her own expense, with new pipe or end sections of the same kind and size. Material not suitable for salvage shall be disposed of by the Contractor as specified in Article 202.03 of the Standard Specifications.

Installation: Salvaged reinforced concrete pipe culverts and flared end sections shall be reinstalled as specified in Section 542 of the Standard Specifications.

Method of Measurement: Remove and reinstall pipe culverts will be measured for payment in feet.

Basis of Payment: Removing and reinstalling pipe culverts will be paid for at the contract unit price PER FOOT for REMOVE AND RE-INSTALL PIPE CULVERTS, which price shall include excavation, preparing the foundation, connecting to the pipe, backfill and seeding, including fertilizer nutrients.

SEALING PRECAST PIPE JOINTS

Description: This work applies to precast pipe culverts or storm sewer installed below embankments greater than 10 ft high. When mastic joint sealer is used, joints shall be sealed with a combination of the mastic joint sealer and non-woven geotechnical fabric according to Article 540.06.

Basis of Payment: This work will not be paid for separately but shall be included in the contract unit price per ft for PIPE CULVERTS or STORM SEWERS of the class, type, and diameter specified.

TEMPORARY STORM SEWERS

Description. This work shall be performed in accordance with Section 550 of the Standard Specifications. Material used for the storm sewer shall be at the contractor's discretion and shall be approved by the engineer. Any damage to the temporary storm sewer incurred as a result of unrelated construction processes, traffic, weather, or other reasons shall be replaced at the contractor's expense. Removal of the temporary storm sewer and backfilling shall be included in this item.

Method of Measurement and Basis of Payment. This work shall be measured and paid for in accordance with Article 550.09 of the Standard Specifications for TEMPORARY STORM SEWERS of the diameter specified, and shall include all materials, labor, and equipment to perform the work.

ABANDON AND FILL EXISTING STORM SEWER

Description. This work shall consist of filling storm sewers to be abandoned as shown on the plans or as directed by the Engineer, after pipes have been cleaned and televised. If blind-ties are noted in existing system to be abandoned, the Engineer shall be notified for further disposition prior to abandoning and filling the existing storm sewer. All storm sewer pipes to be abandoned in place shall be completely filled with Controlled Low Strength Material (CLSM) in accordance with Section 1019 and Article 593.03 of the Standard Specifications. The ends of the storm sewer pipe shall be sealed with concrete block and mortar, a poured concrete plug, or other means approved by the Engineer.

Existing storm sewer pipe ends shall be securely sealed in accordance with Article 605.03.

Materials: CLSM shall meet the requirements of Section 1019 of the Standard Specifications.

General Requirements. The storm sewer pipe shall be plugged on both ends with Class SI Concrete. The plug shall be adequate to withstand the hydrostatic load created during the filling operation. If the plugs fail during construction, the Contractor shall be responsible for the cost of repairing the pipe plugs and filling the remainder of the storm sewer.

The Contractor shall be responsible for removing any debris associated with this work from the downstream storm sewer.

Storm sewers intended for use to maintain storm water flow during staged construction shall not be abandoned and filled until proposed storm sewer construction is completed to maintain flow.

Basis of Payment. This work shall be measured in place and paid for at the contract unit price per FOOT for ABANDON AND FILL EXISTING STORM SEWER. This price shall include all costs for providing and injecting CLSM, capping and all other labor, equipment, and materials necessary to abandon and fill the pipe in accordance with the Specifications.

Cleaning and televising the storm sewer shall be paid for separately.

STORM SEWER REMOVAL

Description. This work shall consist of the complete removal of the existing storm sewer at locations shown on the plans and as directed by the Engineer and shall be done in accordance with the applicable portions of Section 551 of the Standard Specifications. None of the pipe removal is considered salvageable for re-use.

The area of excavation required to expose the storm sewer removed shall be filled with trench backfill meeting the requirements of Section 208 of the "Standard Specifications" except that the aggregate may be a local material meeting the approval of the Engineer. All work and materials necessary to backfill, including trench backfill, will be included in the cost of the storm sewer removal pay item and no further compensation will be provided.

The removal and disposal of existing drainage structures will be paid for separately.

Basis of Payment. This work will be paid for at the contract unit price per ft for STORM SEWER REMOVAL, regardless of the diameter of the pipe or depth removed which price shall include all labor, equipment and materials necessary to complete the work. No additional compensation will be allowed due to the various sizes, types, depths or lengths. The sizes, types and lengths shown in the plans are for information only and shall be verified by the contractor prior to bidding.

PLUG PIPE PENETRATION

Description. This work shall consist of permanent plugging any holes left in the wall of the main concrete storm sewer to remain with a concrete plug after removal of the minor storm sewer blind connection at the locations shown on the plans or as directed by the Engineer.

Construction Requirements. The contractor shall completely remove the existing minor pipe penetrating the existing main pipe to remain as specified in the plans. Extra care shall be taken when removing the penetrating pipe as to minimize the damage to the wall of the existing pipe to remain. All loose concrete around the pipe opening shall be removed. The proposed concrete plug shall be formed flush with, and shaped to match the curvature of the inside face of the wall of the existing pipe to remain. The thickness of the concrete plug shall be a minimum of 3" greater than the wall thickness of the existing pipe to remain. On the outside face of the existing pipe to remain, the plug shall extend a minimum of 4" beyond the edges of the wall opening.

Class SI concrete meeting the requirements of Section 1020 of the Standard Specifications shall be used to construct the concrete plug. The wall penetration shall be completely sealed to prevent groundwater seepage.

The excavation shall be backfilled and compacted after the concrete plug has cured.
The contractor shall maintain flow in the existing pipe at all times.

Basis of Payment. At all locations where minor storm sewers at blind connections are to be removed, the cost of permanently plugging the main storm sewer to remain shall be included in the cost of STORM SEWER REMOVAL.

DUCTILE IRON WATER MAIN FITTINGS

Description. This work shall consist of the furnishing and installation of ductile iron water main fittings, either on existing or proposed water mains at locations indicated on the Plans or directed by the Engineer. Installation of ductile iron pipe or casing pipe is not included under this item.

General Requirements.

1. New ductile iron, meeting AWWA C110
2. Fittings include, but are not limited to, bends, tees, permanent plugs or caps, anchoring tees, anchor couplings (i.e. for fire hydrants), offsets, reducers, and solid sleeves.
3. All restrained glands and other appurtenances associated with joint restraint (including locking segments, Romac Grip Rings, and similar) are considered incidental to the contract and shall be included in the cost of DUCTILE IRON WATER MAIN FITTINGS.
4. 6-inch to 12-inch diameter shall be class 350 (minimum), greater than 12-inch diameter shall be class 250 (minimum).
5. Mechanical joint, TR Flex, HDSS, and Flex Ring are all acceptable fitting joints. See also the restrained joint requirements in DUCTILE IRON WATER MAIN
6. Cement mortar lined and coated with asphaltic material inside and outside in accordance with ANSI/AWWA A21.4/C104
7. At the proposed locations where a tee for fire hydrant is to be installed with a branch valve, a mechanical joint fire hydrant anchoring tee with rotating gland shall be installed in the main line to secure the valve. For these anchor tee fittings, AWWA C153 may accepted in lieu of AWWA C110.
8. All nuts, bolts, and washers shall be Corten or stainless steel
9. All fitting joints shall be furnished with two silicon bronze serrated wedges or conductive gaskets at each joint. The wedges shall be installed at 180-degree intervals after the joint is completed.
10. All applicable sections of DUCTILE IRON WATER MAIN shall also apply to this specification.
11. All caps/plugs for dead end water main shall be restrained. A thrust block shall also be installed.
12. Acceptable fitting manufacturers include American, US Pipe, McWane, or Engineer approved equal

Method of Measurement. The work under this item as described herein will measured in pounds of each DUCTILE IRON WATER MAIN FITTINGS installed. Measurement will include only the weight of the raw fitting and does not include retainer glands, restrained joint locking segments, nuts, bolts, and any other appurtenances that may be required for a complete and working installation.

DUCTILE IRON WATER MAIN will be measured and paid separately.

Basis of Payment. This work will be measured and paid for at the contract unit price per POUND for DUCTILE IRON WATER MAIN FITTINGS and includes all water main fittings shown on the plans and any additional water main fittings, including all labor, equipment, and materials required for a complete and fully operational installation.

WATER MAIN TO BE ABANDONED

Description. Work under this item will include the abandonment and filling of water main after the piping has been removed from service at locations indicated on the Plans or directed by the Engineer. This work shall include all bends, fittings, valves, and all other appurtenances related to the piping to be abandoned.

General Requirements. All abandoned piping shall be completely filled with Controlled Low Strength Material (CLSM).

Prior to the start of work under this item, the following items shall be approved by the Engineer: Controlled Low Strength Material mix design, access plan and construction details for filling location, access plan and construction details for the filling Location, CLSM placement sequence and finishing details.

The water main abandonment shall be performed from a minimum of two locations. No additional payment for excavation, etc. shall be made if more than two (2) locations are required. Prior to the start of filling, any required venting points shall be installed. CLSM shall be placed in a manner that completely fills the water main pipe between the access points, regardless of piping elevation differences between access points.

All pipes to be abandoned under this item shall have all openings sealed with a one (1) foot minimum length concrete mortar plug. Include any required pipe cutting.

Any opening created in the existing pipe, including fill or vent points, shall be completely filled with CLSM and plugged. If it is not, then the opening shall be permanently patched and sealed so that water and or soil cannot flow into the abandoned pipe.

Any necessary equipment, saw cutting, and excavation required to access the existing water main and to perform all work under this item shall be included.

Method of Measurement. This work will be measured in feet along the centerline of the abandoned pipe at the ground level, and the measurement shall extend through fittings and valves. The length will include all concrete mortar plugs placed and CLSM placed within pipes to remain.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for WATER MAIN TO BE ABANDONED, of the diameter specified, and includes all labor, equipment, and materials necessary to complete the work as described, including access locations, venting points, concrete mortar plugs, and CLSM. Concrete mortar and CLSM will not be paid for separately but are included in the cost of this pay item.

WATER MAIN REMOVAL

Description. This work shall consist of complete removal of the existing water main piping shown on the plans or as directed by the Engineer.

General Requirements. All water shutdowns shall be coordinated with the City of Decatur. The area of excavation required to expose the water main being removed shall be backfilled in accordance with IDOT requirements. All work necessary to remove the water main will be included in the cost of the pay item and no further compensation will be provided. Removal shall include the removal and proper disposal of any piping, fittings, bends, valves, existing thrust blocks, and appurtenances, as required for construction.

If the existing piping is encased (e.g. in a steel casing pipe), the removal shall include both the casing and carrier pipe. The cost of the casing pipe removal will be considered incidental to the cost of the carrier pipe being removed.

Method of Measurement. This work will be measured in feet along the centerline of the removed pipe at the ground level (i.e. if the existing piping is encased), the Contractor will only be paid at the contract unit price for the carrier pipe being removed. Any casing pipe removal will be considered incidental to the cost of carrier pipe removal.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for WATER MAIN REMOVAL, regardless of size, which price shall include all labor, equipment, and materials necessary to perform said work.

WATER MAIN LINE STOP

Description. This work shall consist of all labor, material and equipment required to install a water main line stop at locations indicated on the Plans or directed by the Engineer. It shall be performed in accordance with applicable portions of the Standard Specifications for Water and Sewer Main Construction in Illinois and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

General Requirements. The work shall include all necessary equipment necessary to make the line stop. Any fittings, sleeves, piping, valves, or any other appurtenance required for the line stop, shall be included. The City shall be notified a minimum 48 hours prior to the planned work. No other water main shutdowns or disruption to the system will be permitted during the line stopping work. The actual sequence of construction installation shall be discussed and scheduled at a pre-construction meeting with the Contractor, Engineer and the City.

It shall be the responsibility of the Contractor to verify that flow rates and pressures in the existing water main are within acceptable ranges for the line stopping operation and shall coordinate required adjustments with the City and the Engineer. Contractor shall power wire brush and grind the exterior of the main to remove any debris, corrosion deposits, or other surface irregularities that might interfere with proper seating and sealing of each line stop fitting against each main. Any structural defects in main, service connections, appurtenances, adjacent utilities, etc., that could interfere with the line stop installation shall be immediately reported to Engineer.

The sleeve shall be full sleeve, Mueller, Ford Meter Box, or Engineer approved equal stainless steel tapping sleeve rated for 150 psi (minimum) working pressure. Provide a stainless-steel flanged outlet with a stainless steel test plug, nuts, bolts, and washers.

Line stops are to be performed by a qualified subcontractor. Subcontractor shall have a minimum of 10 years' experience performing line stops, and shall have recent, direct experience performing line stops on the size and type of pipeline being line stopped.

Contractor shall pour a minimum of 12-inches of concrete under the tapping sleeve for structural support of the sleeve, piping, and other appurtenances. The Contractor shall also obtain the services of a structural engineer, licensed (S.E.) in the state of Illinois to design the required thrust block restraint system for all linestops.

The tapping procedure, sequence and schedule shall be submitted for approval to the Engineer. Line stops will be performed under the supervision of the City.

Method of Measurement. The work will be measured for payment in place for each line stop, at the specified size, made to an existing water main.

Basis of Payment. This item shall be paid for at the contract unit price per EACH for WATER MAIN LINE STOP, of the size specified, which shall be payment in full for all labor, equipment, materials, and all other work required to complete the installation of the line stop including pipe, valve, fittings, sleeve, excavation, shoring, thrust restraint, trench backfill and all appurtenances necessary for a complete installation. All concrete for the linestop shall be included in the WATER MAIN LINE STOP and will not be paid for separately. Any piles require for the thrust block shall also be included in the cost of the WATER MAIN LINE STOP.

CONTROLLED LOW-STRENGTH MATERIAL, SPECIAL

Description. This work shall consist of furnishing and placing controlled low-strength material (CLSM) to backfill the space between the sides of the excavation and the outside of proposed catch basins, manholes, inlets or drainage structures; the hole formed by the removal of existing catch basins, manholes and inlets; and as backfill for proposed storm sewer and existing storm sewer removal trenches at the locations noted on the plans and specified in the Contract Documents. This work shall be performed in accordance with Section 593 of the Standard Specifications, except as herein modified.

Revise the third paragraph of Article 593.04 of the Standard Specifications to read:

(b) Storm Sewers. When backfilling storm sewers, aggregate bedding shall be placed and compacted according to Article 550.07 prior to the placement of CLSM. The CLSM shall be distributed evenly in the trench above the aggregate bedding.

Add the following to Article 593.04 of the Standard Specifications:

(c) Removal of existing Storm Sewers, Catch Basins, Manholes and Inlets. When backfilling storm sewer removal trenches and the holes formed by the removal of catch basins, manholes and inlets, the CLSM shall be distributed evenly in the trench or hole.

(d) Installation of proposed Catch Basins, Manholes, Inlets and Drainage Structures. When backfilling the space between the sides of the excavation and the outside of proposed catch basins, manholes, inlets or drainage structures, the CLSM shall be distributed evenly in the space between the sides of the excavation and the outer surface of proposed structure.

Revise Article 593.05 (b)(2) of the Standard Specifications to read:

(2) Storm Sewers. When CLSM is specified for backfilling storm sewers, the computed volume will not exceed the volume calculated in accordance with Article 208.03(b).

Add the following to Article 593.05 of the Standard Specifications:

(3) Removal of Storm Sewers. When CLSM is specified for backfilling storm sewer removal trenches, the computed volume will not exceed the volume calculated in accordance with Article 208.03(b), except an addition will be made for one-half of the volume of the pipe removed.

(4) Removal of Catch Basins, Manholes and Inlets. When CLSM is specified for backfilling the hole formed by the removal of catch basins, manholes and inlets, the maximum payment volume (V) will not exceed the volume computed by multiplying the height (h) of the structure as measured from the rim or proposed subgrade elevation to the bottom of structure base elevation by the circular area of the outside diameter (OD) of the structure plus 4 feet.
$V = (h (\pi/4) (OD+4)^2)$

(5) Catch Basins, Manholes, Inlets and Drainage Structures. When CLSM is specified for backfilling the space between the sides of the excavation and the other surface of proposed catch basins, manholes, inlets or drainage structures, the maximum payment volume (V) will not exceed the volume computed by multiplying the height (h) of the structure as measured from subgrade elevation to the bottom of structure base elevation by the difference between

the circular area of the outside diameter (OD) of the structure plus 4 feet and the circular area of the outside diameter (OD) of the structure.

$V = (h ((\pi (OD+4)^2 /4 – (\pi OD^2 /4))) / 27$

Revise 593.06 of the Standard Specifications to read:

593.06 Basis of Payment. This work will be paid for at the contract unit price per cubic yard for CONTROLLED LOW-STRENGTH MATERIAL, SPECIAL.

PIPE DRAINS 4" (SPECIAL)

Description: This work shall be in accordance with the details shown in the plans, Section 601 of the Standard Specifications and this special provision. This work shall include field verifying the locations of all existing pipe drains and pipe underdrains, connections to existing storm sewer and concrete headwall outlets for areas along Brush College Road and Faries Parkway where existing pavement is to remain.

In areas where pavement is to remain, the existing pipe drains and pipe underdrains shall not be damaged. Any damage to pipe drains and pipe underdrains to remain in place shall be repaired at the Contractor's expense.

New pipe drains shall be connected to existing pipe underdrains to provide outlet of existing pavement underdrains into new or existing storm sewer. New pipe drains shall be connected to pipe underdrains for structures as shown on the plans or as directed by the Engineer to provide outlet to new or existing storm sewer.

At locations shown on the plans or as directed by the Engineer, new pipe underdrains shall be connected to a drainage structure. The connection shall be made by coring or forming a hole of the required size in the pipe or drainage structure and fitting it with a manufactured collar approved by the Engineer to provide a watertight seal.

Materials. The storm sewer shall be Polyvinyl Chloride (PVC) Pipe, in accordance with Article 1040.03 (a) of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per ft for PIPE DRAINS 4-IN (SPECIAL) which price shall include the field verification, backfill material as shown in Standard 601001 and all connections to existing pipe underdrain, proposed pipe underdrains for structures and drainage structures.

Removal and disposal of the existing pipe underdrains, connection and concrete headwalls for pipe drains will not be paid for separately, but will be considered included with Pavement Removal.

VALVE BOX

Description. This work shall consist of installation of valve boxes at all water valve locations shown on the plans or as directed by the Engineer.

General Requirements. Cast iron valve boxes shall be provided for all valves. The valve boxes shall be provided with screw type adjustable boxes, marked "Water", approximately 5 inches in diameter, and so constructed that the removable cover will not be displaced by vehicular travel over the box. Boxes shall be provided with a hood at the base of the lower section to relieve any strain on the valve bonnet. They shall extend from 36 inches to 54 inches unless otherwise required. The valve boxes shall be new and secured from responsible manufacturers (Clow, Tyler Union, or approved equal).

Valve boxes shall be set so that the base will be two (2) inches or more above the flanged joints of the valve dome. The operating nut of the valve shall be in line with the hub or upper part of the valve box base where it is connected with the upright jacket. After the valve boxes have been placed in proper position, they shall be backfilled with appropriate material and thoroughly hand tamped up to the surface of the ground. In no case shall the boxes be allowed to shift from a perpendicular position.

For water valves that require a bypass valve, two (2) valve boxes shall be installed, and the Contractor shall be paid for each box.

Any valve box which has been moved from its original position by direct or indirect actions of the Contractor, so as to prevent the operation of the valve, must be reset and/or replaced as applicable, by the Contractor. This work will be considered incidental to the construction and not considered for additional payment. Any valve key extension or stem, which has been damaged so that it is inoperable, must also be replaced, and will also be considered incidental to the construction and no additional payment will be allowed.

Method of Measurement. This work will be measured at the contract unit of each valve box installed.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for VALVE BOX, which price shall include all labor, equipment, and materials necessary to perform said work.

WATER VALVES shall be paid for separately.

VALVE BOXES TO BE REMOVED

Description. This work shall include all required excavation and the removal and proper disposal of existing valve boxes, at locations shown on the plans or when directed by the Engineer. This work shall be performed in accordance with the applicable portions of Section 561 of the Standard Specifications and Section 42 of the Water and Sewer Specifications

General Requirements. . All water shut downs shall be coordinated with the City. The Contractor shall remove and dispose of the existing valve box. The void space shall be backfilled with an Engineer approved material and compacted to the satisfaction of the Engineer.

Excavation and disposal of materials required to remove the box will be included in this work and shall be disposed of per Article 202.03. Valve boxes shall be removed to the depth as directed by the Engineer being backfilled and compacted to grade. The remainder of the excavated area shall be backfilled in accordance with Section 208. All work and materials necessary to backfill will be included in the cost of the valve boxes to be removed pay item and no further compensation will be provided.

Method of Measurement. This work shall be measured per each valve box to be removed.

Basis of Payment. The removal and disposal of existing water valves and valve boxes will be paid for at the contract unit price EACH for VALVE BOXES TO BE REMOVED, which price shall include all labor, material, disposal and equipment necessary to complete the work.

CORRUGATED MEDIAN REMOVAL

This work shall consist of removing and disposing the existing corrugated median in accordance with the applicable portions of Section 440 of the Standard Specifications at the locations shown on the plans and as directed by the Engineer.

Method of Measurement. The Portland cement concrete corrugated median removal will be measured for payment according to the requirements of Article 440.07 (a) or (b) of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per square foot for CORRUGATED MEDIAN REMOVAL, which price includes all labor, material and equipment necessary to remove and dispose of the corrugated median surfaces as shown in the plans or as directed by the Engineer.

CONCRETE THRUST BLOCKS (SPECIAL)

Description. This work shall consist of concrete thrust blocks installed at locations shown on the Plans or as directed by the Engineer.

General Requirements. This work shall be performed in accordance with the City of Decatur Standard Specifications for Water Main Construction and the City of Decatur Construction Standard Details 4020, 4021, and 4021A, all except as noted herein.

Concrete thrust blocks shall be constructed at plugs, tees, and bends of 3000 PSI concrete in accordance with section 41- 2.10 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition, and City of Decatur Standard Specifications for Water Main Construction, except as noted herein. The concrete thrust blocks shall be a minimum of 12 inches thick. The concrete thrust blocks shall completely fill the space between the bends or fittings and the walls of the trench from 6 inches below the fittings to 12 inches above the fitting with no possible interference with the making or remaking of the joints. In addition to the concrete thrust blocking, joints, bends of 11 degrees and larger, and fire hydrants shall be restrained as detailed in DUCTILE IRON WATER MAIN.

The following materials are required; class SI concrete, #5 reinforcement bars shall be used as shown on the standard drawing, and 16-gauge sheet metal plates cut to size as shown on the standard drawing.

Contractor shall follow the standard dimensions in the City of Decatur Standard Construction details as close as possible, but in no case will a smaller dimensioned thrust block be acceptable. The bottom of the foundation for the block shall be clean and conform to the shape shown in the standard. The sides of the block shall conform to the shape shown on the standard. Forms are required to ensure the block configuration is being adhered to and to insure the retention of the concrete during its consolidation. The concrete shall not hinder the removal of any bolts or restrained appurtenances.

The back side of the block must be poured against undisturbed earth. If during the installation of the water main, additional earth has been excavated or disturbed, the concrete block shall be extended to an undisturbed area. No backfilling must take place until the poured concrete has taken its initial set. Reinforcement bars must be placed in proper position prior to pouring. Floating the bars into position will not be allowed.

Precast concrete blocks are acceptable for water mains 12-inch diameter and smaller, unless otherwise indicated in the drawings. Thrust blocks for water mains 16-inch diameter and larger shall be poured in place. For any PRESSURE CONNECTION, thrust block requirements are equivalent to those of tees.

Method of Measurement. The work will be measured for payment in place for each concrete thrust block provided, whether precast or poured in place.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for CONCRETE THRUST BLOCKS (SPECIAL) which price shall be payment in full for performing the work herein and shall include all materials, labor and equipment necessary to perform the work as specified. Water main pipe, fittings, excavation and backfill shall be paid for under other items.

SIGN REMOVAL

This work shall consist of furnishing all labor, materials and equipment necessary to complete Sign Removal, and shall conform to section 724 of the Standard Specifications for Road and Bridge Construction.

The Contractor shall remove the existing signs and posts as specified in the contract plans. All removed signs and posts shall become the property of the Contractor.

This work shall be paid for at the contract unit price per each for SIGN REMOVAL.

LIGHTING CONTROLLER FOUNDATION

Description. The Contractor will install a concrete foundation for a base mounted street light controller cabinet, as shown in the plans.

General Requirements. The work described under this item involves the contractor furnishing and installing all materials and equipment in order to construct a concrete foundation for a base mounted lighting controller cabinet.

Material. Concrete will be Portland cement concrete, SI Class, meeting the requirements of Article 1020 of the Standard Specifications. Grounding and ground rods must meet the requirements of Standard Specification Section 806 and material specifications shall meet materials requirements in Article 1087 of the Standard Specifications. Conduit will be PVC meeting the requirements of Material Specification article 1088.01. Anchor rods must meet the applicable requirements of Standard Specifications section 825 and Material Specification Article 1467.

Construction. The contractor will install the concrete foundation as shown on IDOT Standard Drawing 825011-04. Work under this item will be performed in accordance with section 800 of the Standard Specifications except as modified herein.

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. The lighting controller enclosure shall be set plumb and level on the foundation. It shall be fastened to the anchor rods with hot-dip 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.

The foundation must have a minimum depth of at least fifty inches (50") below grade and will have large radius conduit elbows in quantity, size and type shown. The elbow ends above ground will be capped with standard conduit bushings. The Contractor must furnish anchor bolts, hardware, conduit elbows, and all other material shown on the foundation construction drawing.

All excavation and restoration of parkway will be included in this item. If the foundation is in sidewalk, an expansion joint will be required between the sidewalk and the foundation.

Method of Measurement. LIGHTING CONTROLLER FOUNDATION shall be measured per each unit completed of the type and construction shown on the plans.

Basis of Payment. Unit price will include cost of all material and labor required to install this foundation, as per applicable construction plans and these specifications. The conduit elbows will be considered as part of the foundation and will not be paid for as a separate item or as part of the conduit laterals leading to the foundation. All necessary excavation and restoration of parkway to the original condition will be included in the unit price. Any sidewalk removal will be paid for as a separate pay item. However, any restoration of sidewalk will be considered as part of this item, including any expansion joint between the sidewalk and the foundation. This work will be paid for at the Contract Unit Price of EACH for LIGHTING CONTROLLER FOUNDATION.

MAST ARM, ALUMINUM, 12 FT.

Description. This work shall consist of furnishing and installing Aluminum Street lighting mast arms as specified herein and as shown on the plans.

General Requirements. The work described under this item involves the contractor furnishing and installing aluminum street lighting mast arms of the size and type shown on the plans.

Aluminum mast arms shall be according to Article 1069.02(a) of the IDOT standard specifications.

Method of Measurement. MAST ARM, ALUMINUM, 12 FT shall be measured per each mast arm of the type and size shown on the plans.

Basis of Payment. This item shall be paid for at the contract unit price each for MAST ARM, ALUMINUM, 12 FT, of the size and type indicated on the plans, which shall be payment in full for furnishing and installing the mast arms as described herein, shown on the plans, and approved by the engineer.

MAST ARM DAMPENING DEVICE

Description. This work shall consist of installing a dampening device on mast arms, greater than 46 feet in length, equidistant between the two outermost signal heads.

General Requirements. The dampening device shall consist of a 36” x 72” Type 1 unpainted aluminum sign stock mounted horizontally on top of the mast arm with the 36” length perpendicular to the arm.

Method of Measurement. This work will not be measured separately for payment.

Basis of Payment. This work shall be considered as included in the unit cost, per EACH, for STEEL COMBINATION MAST ARM ASSEMBLY AND POLE and STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH DUAL MAST ARMS, of the size specified.

EMERGENCY VEHICLE PRIORITY SYSTEM

Description. This work shall consist of installing and testing of an emergency vehicle priority system, in accordance with manufacturer's specifications and with Section 887 and Articles 1072 of the Standard Specifications except as described herein.

General Requirements.

GPS SYSTEM CABLE AND DEVICE BOX INSTALLATION SPECIFICATIONS

A device box shall be mounted to the signal mast arm support above or below so the horizontal arm does not obstruct the radio line of sight. The GPS radio must be mounted at a 45 degree angle with the large part of the radio pointing to the center of the intersection. It will be suitable for use with an Opticom EVP Radio/GPS unit supplied by the Contractor. The device box shall be installed using ¾ inch NPT electrical pipe materials including a malleable iron device box approved for rain-tight locations including the appropriate cover and gasket. A PELCO AB-0163-SS Cable Mount Mini-Brac, shall be used to attach the device boxes to the signal mast arm. All equipment and mounting hardware shall be supplied by the Contractor. All hardware shall be securely mounted to be level/plumb and retain its alignment.

The GPS system cable shall extend from the traffic signal cabinet to the signal mast arm located nearest the traffic signal cabinet. It shall be a continuous run with no splices. This wire run shall not exceed 250 feet in total length. There shall be a minimum of 10 feet of wire identified and secured inside of the in-ground pull box located nearest the traffic signal cabinet and the mast arm pole. The device box shall have a minimum of 2 foot of wire inside of it. A minimum of 15 foot of wire shall be identified and secured inside of the traffic signal cabinet for future use.

For additional information on device placement or questions regarding the Emergency Vehicle Pre-Emption, please contact Traffic Technician city of Decatur Mark Freeman Contact information (217) 875-4879 Work or (217) 329-2005 Mobile.

Material Specifications

Opticom GPS System Cable

- 300-volt rating
- 90 degree Celsius (194 degree Fahrenheit) temperature range
- Outer Jacket: Black SR-PVC, UV and moisture resistant
- Ten twisted pair conductors (5 pairs) AWG #20 (7 x 28) stranded, individually tinned copper:
    - Yellow/Yellow Black
    - Blue/Blue-White
    - Orange/Orange-Green
    - Brown/Brown-White
    - Purple/Purple-White
- Aluminized polyester shield
- Drain wire AWG #22 (7 x 28) stranded, individually tinned copper
- UL and cUL recognized
- Estimated Quantities for Labor Cost:

- Intersection of Brush College Road and the connector road 191 Foot
- Intersection of Faries Parkway and the connector road 240 Foot
- Total Est for (2) Intersections: 431 Foot

Device Box for Beacon Socket &/or Radio/GPS Unit

- Malleable Iron
- Tri-coat finish of electrozinc, chromate sealant and electrostatically applied powder coating
- Single gang with Iron blank cover for single gang boxes electrostatically applied powder coating
- 4-Inlets
- Hub Size ¾”
- Estimated Quantities for Labor Cost:
- Intersection of Brush College Road and the connector road 1 Each
- Intersection of Faries Parkway and the connector road 1 Each
- Total Est for (2) Intersections: 2 Each

Astro Mini-Brac Clamp Kit

- ¾” – 14 NPT
- Cable Mount
- Stainless Steel
- Estimated Quantities for Labor Cost:
- Intersection of Brush College Road and the connector road 1 Each
- Intersection of Faries Parkway and the connector road 1 Each
- Total Est for (2) Intersections: 2 Each

Method of Measurement. EMERGENCY VEHICLE PRIORITY SYSTEM shall be measured per each unit of the type and construction shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price for EACH for EMERGENCY VEHICLE PRIORITY SYSTEM, which price shall include all labor necessary to furnish, install complete, and configure and test the work as specified.

DUCTILE IRON WATER MAIN IN CASING PIPE

Description. This work will consist of the installation of water main within steel casing pipe at the size specified, including all required appurtenances (e.g. pipe spacers). Installation of the casing pipe is not included under this Item.

Water main shall be installed according to Article 561 of the "Standard Specifications" and in conformance with City of Decatur Standard Specifications for Water Main Construction, except as noted herein.

General Requirements. The furnishing and installation of DUCTILE IRON WATER MAIN IN CASING PIPE shall conform to the Contract and the applicable sections of "DUCTILE IRON WATER MAIN". The applicable sections include, but are not limited to, pipe thickness, internal and external coatings, joints, gaskets, conductivity, restraint, polyethylene encasement, sequencing, water/sewer separation requirements, grouting of annular spaces, bulkheading of casing pipe openings, flushing, testing, disinfection, etc., and other items as determined by the Engineer.

For carrier pipe support:

1. Casing spacers: Provide electrically isolating stainless steel spacers of Type 304 stainless steel shells, PVC liner, high molecular weight polymer runners, and stainless steel bolts and lock nuts.
2. Spacers shall be placed at a maximum distance of 10-feet on center, with a minimum of three (3) spacers per pipe length, with one (1) spacer within two (2) feet from any end.

After the pipeline has been installed in the cased tunnel, and before completion of pressure and leakage testing of the main, the annular space between the casing and main shall be filled completely with cellular foam concrete (or other material approved by the Engineer) pumped into place meeting ACI 523.3R code and at each end of the tunnel shall be closed with a twelve (12") inch thick brick bulkhead.

All water main installed within a casing pipe shall be restrained.

Method of Measurement. This work will be measured in feet along the centerline of the pipe at the ground level.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for DUCTILE IRON WATER MAIN IN CASING PIPE, of the diameter specified, and includes all spacers, appurtenances, labor, equipment, and materials necessary to complete the work as described.

Steel casing pipe will be paid for separately.

OPEN CUT STEEL CASINGS

Description. This work shall consist of installing a steel casing pipe at the location, line and grades provided on the plans or as directed by the Engineer via open cut construction, not jack and bore construction.

General Requirements. This work shall consist of the construction of steel casing pipe at the locations indicated in the Plans or as directed by the Engineer and shall conform to the Contract and the applicable sections of the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

After installation of the casing pipe is completed, the proposed water main shall be constructed in place within the casing. The applicable requirements for STEEL CASINGS shall also apply herewith, including, but not limited to, casing pipe thicknesses, and grading.

IDOT standard utility excavation and trenching standards shall also apply.

Method of Measurement. This work will be measured in feet along the centerline of the casing. Pipe to be installed within the casing will be measured separately.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for OPEN CUT STEEL CASINGS, of the diameter specified, and includes all labor, equipment, and materials necessary to complete the work as described, including steel casing pipe and accessories, furnishing, placing, protecting, temporary soil retention systems, preparation of shop drawing submittals, excavation, temporary support or bracing of excavations and existing utilities, excavations to confirm locations of adjacent existing utilities, and dewatering. Installation and subsequent removal of required temporary soil retention systems shall not be paid separately but shall be considered included with this work.

DUCTILE IRON WATER MAIN IN CASING PIPE will be paid for separately.

FIRE HYDRANTS TO BE MOVED AND REPLACED

Description. This work shall consist of moving and replacing existing City fire hydrants and auxiliary valve boxes affected by new grading at locations shown on the Plans or as directed by the Engineer. Contractor shall not be paid to adjust any proposed hydrants. The Contractor shall be responsible to coordinate and sequence the construction of proposed fire hydrants with all other work to avoid adjustments to any proposed hydrants. If the adjustment of a proposed hydrant is required, it shall be at the Contractor's expense.

General Requirements. Contractor shall temporarily remove any existing City of Decatur fire hydrant that may conflict with the construction. Contractor shall not operate any hydrant auxiliary valves but shall coordinate closing of hydrant auxiliary valves with the City of Decatur. No other shutdowns of the City's water supply system will be permitted. The existing auxiliary valve shall be closed, and the existing hydrant and lead shall be disconnected from the flanged or mechanical joint of the valve. The Contractor shall replace the existing hydrant with a new fire hydrant that has been approved by the City of Decatur and meets the requirements of AWWA C502. Contractor shall return all unusable hydrants to the City of Decatur Department of Public Works.

If required for construction sequencing and phasing, Contractor shall install a temporary cap or plug on the valve or hydrant lead to protect the water main from contamination. Contractor shall also install any temporary thrust blocking and bracing that may be required. Otherwise, the Contractor shall install the new hydrant at the same time that the existing hydrant is removed. Prior to installation, the hydrant shall be protected from any damage and temporarily stored in a weather tight, climate controlled enclosure in an environment favorable to the hydrant.

After roadway improvements have been performed, Contractor shall remove the temporary cap or plug, supply all piping, appurtenances, fittings, fire hydrant extensions, and adapters required for a complete installation and to adjust the hydrant to meet the finished grade. All piping, appurtenances, fittings and adapter shall meet the requirements of AWWA C104, AWWA C110, AWWA C151, AWWA C153, and AWWA C150 and shall be disinfected according to the requirements of AWWA C651. All joints shall be restrained. Install hydrant with a minimum of 3.5 ft. of cover over the connection pipe. The frost ring shall be set at the finished grade. The grade ring of the hydrant shall be set 0.2' above the finished grade or nearest top of curb.

The existing valve box shall be adjusted as required to meet the finished grade. If the grade change is such that the existing valve box cannot be adjusted to meet the finished grade, then the contractor shall provide a new City of Decatur approved valve box or extension. No new auxiliary valve will required.

The temporary thrust block, old permanent thrust block and drainage gravel shall be removed from the site and properly disposed. Set each hydrant on a large flat stone or concrete block and provide not less than 1/2 cubic yard of new gravel or crushed stone at the base for drainage. Back or brace hydrants with a new concrete thrust block extending from the hydrant to the wall of the excavation, and placed to permit removal of the hydrant.

Method of Measurement. The work will be measured for payment in place for each fire hydrant to be moved and replaced.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for FIRE HYDRANTS TO BE MOVED AND REPLACED which price shall be payment in full for performing the work herein and shall include the hydrant, temporary cap or plug, permanent

thrust block, drainage gravel, appurtenances, all saw cutting, excavation, shoring, trench backfill and compaction , existing and temporary thrust block removal, proper disposal and all materials, labor and equipment necessary to perform the work as specified.

All DUCTILE IRON WATER MAIN piping and DUCTILE IRON WATER MAIN FITTINGS shall be paid separately.

REMOVE ABANDONED FORCE MAIN

Description. This work shall consist of complete removal of the previously abandoned force main piping shown on the plans or as directed by the Engineer.

General Requirements. The area of excavation required to expose the abandoned force main being removed shall be backfilled in accordance with IDOT requirements. All work necessary to remove the force main will be included in the cost of the pay item and no further compensation will be provided. Removal shall include the removal and disposal of any piping, fittings, bends, valves, existing thrust blocks, and appurtenances, as required for construction.

If the existing piping is encased (e.g. in a steel casing pipe), the removal shall include both the casing and carrier pipe. The cost of the casing pipe removal will be considered incidental to the cost of the carrier pipe being removed.

Method of Measurement. This work will be measured in feet along the centerline of the removed force main at the ground level (i.e. if the existing piping is encased), the Contractor will only be paid at the contract unit price for the carrier pipe being removed. Any casing pipe removal will be considered incidental to the cost of carrier pipe removal.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for REMOVE ABANDONED FORCE MAIN, regardless of size, which price shall include all labor, equipment, and materials necessary to perform said work.

FILL ABANDONED UTILITY MAIN WITH CLSM

Description. Work under this item will include the filling previously abandoned utility piping with CLSM at locations indicated on the Plans or directed by the Engineer. This work shall include all bends, fittings, valves, and all other appurtenances related to the piping to be filled.

General Requirements. All previously abandoned piping shall be completely filled with Controlled Low Strength Material (CLSM).

Prior to the start of work under this item, the following items shall be approved by the Engineer: Controlled Low Strength Material mix design, access plan and construction details for filling location, access plan and construction details for the filling Location, CLSM placement sequence and finishing details.

The filling shall be performed from a minimum of two locations. No additional payment for excavation, etc. shall be made if more than two (2) locations are required. Prior to the start of filling, any required venting points shall be installed. CLSM shall be placed in a manner that completely fills the utility piping between the access points, regardless of piping elevation differences between access points.

All pipes to be filled under this item shall have all openings sealed with a one (1) foot minimum length concrete mortar plug. Include any required pipe cutting.

Any opening created in the existing pipe, including fill or vent points, shall be completely filled with CLSM and plugged. If it is not, then the opening shall be permanently patched and sealed so that water and or soil cannot flow into the abandoned pipe.

Any necessary equipment, saw cutting, and excavation required to access the existing pipe and to perform all work under this item shall be included.

Method of Measurement. This work will be measured in feet along the centerline of the abandoned utility pipe at the ground level, and the measurement shall extend through fittings and valves. The length will include all concrete mortar plugs placed and CLSM placed within pipes to remain.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for FILL ABANDONED UTILITY MAIN WITH CLSM, of the diameter specified, and includes all labor, equipment, and materials necessary to complete the work as described, including access locations, venting points, concrete mortar plugs, and CLSM. Concrete mortar and CLSM will not be paid for separately but are included in the cost of this pay item.

BOULDER REMOVAL

Description. This work shall consist of providing additional labor, equipment and materials required during jacking and boring operations due to conflicts with boulders that must be removed in order to complete the casing pipe installation, in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest addition.

General Requirements. Provide all required labor, equipment, and materials in order to remove boulders in place and to permit the jacking operation and casing pipe installation to continue at the proposed line and grade shown in the drawings.

Method of Measurement. The work will be measured for payment per each occurence of additional work required for the boring crew to perform the specified work.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for BOULDER REMOVAL, including all labor, equipment, and materials required for a complete installation.

FLAGGERS

Description. This work shall consist of all coordination and payments for providing railroad flaggers as specified in Article 107.12 of the Standard Specifications except the reference to the basis of payment shall be deleted. This pay item shall consist of providing flaggers when working within 25 feet of railroad tracks in locations as depicted in the plans. While no work within Union Pacific/Metra railroad is part of this contract, railroad flaggers will be required whenever work is being conducted within 25 feet of the tracks per UP/Metra requirements.

Method of Measurement & Basis of Payment. This work will be measured and paid for at the contract lump sum price for FLAGGERS, which price shall include all necessary coordination and payments for railroad flagger services for the duration of time necessary to complete the work as shown in the plans. The lump sum payment shall include all mobilizations and manhours of all flaggers required throughout the project to complete the work per the Railroad requirements.

STATUS OF UTILITIES

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

UTILITIES TO BE ADJUSTED

Conflicts noted below have been identified from the survey information and coordination with utilities. The company has been notified of all conflicts and will be required to obtain the necessary permits to complete their work. The responsible agency must relocate or complete new installations as noted in the action column; this work has been deemed necessary to be complete for the Department's contractor to then work in the location for which the item has been listed.

Name and Address of Utility	TYPE	Location	Estimated Date Relocation Completed
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 49+08.43, 10.22' LT to 69+83.51, 21.63' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 51+72.84, 2.34' RT to 69+60.84, 14.43' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 52+22.45, 3.29' LT to 52+24.80, 147.94' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 57+12.29, 52.94' RT to 57+14.03, 1.78' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Faries Parkway, Approximately located at 210+30.20, 82.83' RT to 210+69.13, 83.03' RT	During Construction

City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Faries Parkway, Approximately 209+12.86, 3.22' RT to 210+94.25, 0.72' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Faries Parkway, Approximately 205+20.34, 107.65' LT to 210+70.24, 112.79' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 65+73.28, 93.13' LT to 65+85.31, 3.0' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 65+73.28, 93.13' LT to 66+08.05, 98.60' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 66+06.39, 109.88' LT to 66+08.05, 98.61' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 66+06.39, 109.88' LT to 66+22.53, 112.85' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 66+18.20, 33.55' LT to 66+34.72, 50.91' RT	During Construction
Sanitary District of Decatur Utilities or City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Sanitary Sewer Force Main	Brush College Road, Approximately located at 46+80.03, 42.56' RT to 59+18.85, 37.34' LT	During Construction
Sanitary District of Decatur Utilities or City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Sanitary Sewer Force Main	Brush College Road, Approximately located at 59+37.69, 53.42' LT to 62+05.70, 123.47' RT	During Construction

Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at STA. 52+22.44, 10.13' RT to 52+24.46, 54.61' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 56+74.67, 24.44' RT to 57+09.39, 24.97' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 59+01.51, 49.00' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 60+60.18, 97.47' RT to 60+61.39, 99.26' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 60+64.42, 71.78' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 55+86.21, 35.58' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 56+64.09, 76.32' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 56+78.46, 76.28' RT	Before Construction
Ameren Gas Distribution or Transmission Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 65+51.66, 9.31' RT	Before Construction
Ameren Gas Distribution or Transmission Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 65+85.89, 44.25' RT	Before Construction

Ameren Gas Distribution or Transmission Collinsville, IL 62234	4” Underground Gas Main	Brush College Road, Approximately located at 66+90.60, 49.29' RT	Before Construction
Ameren Gas Distribution or Transmission Collinsville, IL 62234	4” Underground Gas Main	Brush College Road, Approximately located at 67+90.20, 41.19' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 67+90.10, 34.92' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 68+51.08, 34.11' RT	Retired Before Construction
Ameren Gas Distribution or Transmission Collinsville, IL 62234	4” Underground Gas Main	Brush College Road, Approximately located at 68+51.10, 44.51' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 71+13.68, 33.92' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 72+02.84, 33.85' RT	Before Construction
Ameren Gas Distribution or Transmission Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 72+82.38, 19.02' LT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 73+45.69, 33.75' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 74+65.94, 33.67' RT	Before Construction

Ameren Gas Distribution or Transmission Collinsville, IL 62234	12” Underground Gas Main	Faries Parkway, Approximately located at 213+50.29, 40.96' LT	Watch and Protect. 1ft clearance with utilities
Ameren Gas Distribution or Transmission Collinsville, IL 62234	4” Underground Gas Main	Faries Parkway, Approximately located at 222+47.50, 49.84' RT	Watch and Protect. 1ft clearance with utilities
Ameren Gas Distribution or Transmission Collinsville, IL 62234	12” Underground Gas Main	Faries Parkway, Approximately located at 225+76.45, 36.21' LT, 3.75 deep	Watch and Protect. 1ft clearance with utilities
Ameren Gas Distribution Collinsville, IL 62234	12” Underground Gas Main	Faries Parkway, Approximately located at 228+14.15, 0.91' LT, depth undetermined	Watch and Protect. 1ft clearance with utilities
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Jug Handle Connector, Approximately located at 303+70.32, 47.22’ RT to 303+80.41, 61.00' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Jug Handle Connector, Approximately located at 303+67.93, 44.12' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Jug Handle Connector, Approximately located at 303+80.06, 43.44' RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	East Logan Street, Approximately located at 601+40 RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	East Logan Street, Approximately located at 603+90 RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	East Logan Street, Approximately located at 606+41 RT	Before Construction

Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	East Logan Street, Approximately located at 608+90 RT	Before Construction
Ameren Gas Distribution or Transmission & Substation Relocation Collinsville, IL 62234	4” Underground Gas Main	North James Street, Approximately located at 404+94.10, 18.29’ LT	Before Construction
Ameren Gas Distribution or Transmission & Substation Relocation Collinsville, IL 62234	Underground Gas Main	North James Street, Approximately located at 404+95.27, 2.29' LT	Before Construction
Ameren Gas Distribution or Transmission & Substation Relocation Collinsville, IL 62234	Underground Gas Main	North James Street, Approximately located at 404+96.37, 11.40' LT	Before Construction
Ameren Gas Distribution or Transmission Collinsville, IL 62234	Underground Gas Main	E Harrison (West Leg), Approximately located at 809+79 RT	Before Construction
Ameren Gas Distribution or Transmission Collinsville, IL 62234	4” Underground Gas Main	E Harrison (East Leg), Approximately located at 700+72.12, 25.19' LT	To Be Retired Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	E Harrison (East Leg), Approximately located at 706+43 RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	E Harrison (East Leg), Approximately located at 707+00 RT	Before Construction
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	E Harrison (East Leg), Approximately located at 707+98 RT	Before Construction
Ameren Gas Distribution or Transmission Collinsville, IL 62234	Underground Gas Main	Brush College Road (Watermain Stationing) Approximately located at 24+35 to 26.92	Before Construction

Ameren Gas Distribution or Transmission Collinsville, IL 62234	Underground Gas Main	Brush College Road (Watermain Stationing) Approximately located at 32+88	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 47+98, 21' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 50+54, 11' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 52+68, 5' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 50+54, 11' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 54+69, 5' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 56+58, 5' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 58+69, 30' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 60+10, 54' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 62+12, 56' RT	Before Construction

Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution and Transmission	Brush College Road, Approximately located at 62+12, 56' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 48+64, 40' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 49+52, 27' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 51+64, 6' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 52+78, 105' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 52+93, 93' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 53+00, 5' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 53+34, 5' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 53+44, 5' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 53+52, 5' RT	Before Construction

Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 53+71, 94’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 55+12, 5’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 55+25, 65’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 55+25, 5’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 56+46, 5’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 56+67, 17’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 56+70, 40’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 58+97, 36’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 59+38, 44’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 59+56, 47’ RT	Before Construction

Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Transmission	Brush College Road, Approximately located at 59+96, 70' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Stub Pole Electric Transmission	Brush College Road, Approximately located at 60+10, 68' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 64+75, 57' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 64+76, 70' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 65+20, 72' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Stub Pole Electric Distribution	Brush College Road, Approximately located at 65+71, 52' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 65+74, 68' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 66+17, 46' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 67+14, 47' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 68+82, 41' RT	Before Construction

Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 69+05, 76' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 69+05, 96' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 70+13, 41' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Street Light Distribution	Faries Parkway, Approximately located at 208+99, 83' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 209+19, 87' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 209+19, 121' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Street Light Distribution	Faries Parkway, Approximately located at 211+49, 44' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 211+55, 54' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 211+77, 84' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 212+11, 46' RT	Before Construction

Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 212+16, 46' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 212+54, 46' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 213+65, 46' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 213+86, 160' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 214+86, 126' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 215+84, 23' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 215+97, 23' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 219+38, 44' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 219+67, 44' LT	Before Construction

Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 220+29, 79' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 220+32, 43' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 222+64, 41' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 223+50, 15' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 223+64, 13' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 302+34, 71' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 303+03, 28' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Jug Handle Connector, Approximately located at 303+78, 48' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 303+81, 57' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Jug Handle Connector, Approximately located at 303+82, 50' RT	Before Construction

Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 303+94, 53' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Jug Handle Connector, Approximately located at 304+11, 106' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 304+16, 116' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 305+29, 104' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 602+55, 18' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 603+79, 20' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	East Logan Street, Approximately located at 603+86, 20' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 605+14, 18' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 606+21, 17' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	East Logan Street, Approximately located at 606+21, 36' RT	Before Construction

Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 606+36, 18' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 607+37, 18' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 607+63, 27' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 608+58, 18' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 609+09, 18' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Stub Pole Electric Distribution	East Logan Street, Approximately located at 609+34, 22' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	North James St, Approximately located at 405+14.92, 3.38' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	E Harrison (W Leg), Approximately located at 801+79, 14' RT	Before Construction
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Olive Street, Approximately located at 504+80, 22' LT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Olive Street, Approximately located at 504+94, 22' LT	Before Construction

Ameren IP South Collinsville, IL 62234	Utility Pole	Brush College Road (Watermain Stationing) Approximately located at 27+07	Before Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Electric (traffic signals)	Brush College Road, Approximately located at 58+76.26, 28.65' RT to 62+24.66, 15.00' RT	Before Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Electric (traffic signals)	Brush College Road, Approximately located at 60+19.41, 70.40' LT to 62+24.90, 47.85' LT	Before Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Electric (traffic signals)	Brush College Road, Approximately located at 60+47.98, 82.08' RT to 60+77.67, 65.81' LT	Before Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Electric (traffic signals)	Faries Parkway, Approximately located at 207+51.71, 78.47' LT to 213+40.93, 73.82' LT	Before Construction
(Exact owner is not known) ATT, Comcast, Metro Communication	Underground Fiber Optic	Brush College Road, Approximately located at 60+75.10, 0.64' RT	Before Construction
(Exact owner is not known) ATT, Comcast, Metro Communication	Underground Fiber Optic	Brush College Road, Approximately located at 60+69.47, 39.36' RT	Before Construction
(Exact owner is not known) ATT, Comcast, Metro Communication	Underground Fiber Optic	Brush College Road, Approximately located at 60+64.49, 71.33' RT	Before Construction
(Exact owner is not known) ATT, Comcast, Metro Communication	Underground Fiber Optic	Brush College Road, Approximately located at 60+17.97, 35.12' RT	Before Construction
(Exact owner is not known) ATT, Comcast, Metro Communication	Underground Fiber Optic	Brush College Road, Approximately located at 61+28.01, 41.78' RT	Before Construction

(Exact owner is not known) ATT, Comcast, Metro Communication	Underground Fiber Optic	Brush College Road, Approximately located at 69+03.16, 68.04' RT	Before Construction
(Exact owner is not known) ATT, Comcast, Metro Communication	Underground Fiber Optic	E Harrison (E Leg), Approximately located at 707+05 RT	Before Construction
(Exact owner is not known) ATT, Comcast, Metro Communication	Underground Fiber Optic	E Harrison (E Leg), Approximately located at 708+23 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T 4-4" MTD duct & 6-4" PVC duct	Brush College Road, Approximately located at 50+00 to 52+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	The AT&T RT (Remote Terminal) & XBOX (Cross Connect Cabinet)	Brush College Road, Approximately located at 52+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	The AT&T 6-4" PVC duct & 8-4" / 4-3.5" duct	Brush College Road, Approximately located at 52+00 to 57+75 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	The AT&T MH (Manhole)	Brush College Road, Approximately located at 55+60 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	The AT&T RT (Remote Terminal) & XBOX (Cross Connect Cabinet)	Brush College Road, Approximately located at 52+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	All of the AT&T buried copper cables & pedestals	Brush College Road, Approximately located at 52+00 to 57+75	Before Construction

ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	The AT&T pole & AT&T aerial copper cable	Brush College Road, Approximately located at 52+00 heading East along E Olive ST	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T aerial cable	Brush College Road, Approximately located at 56+65 RT to 57+75 RT heading South along E Logan ST	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T aerial cable	Brush College Road, Approximately located at 57+75 to 59+35 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	The AT&T 6-4” duct, 8-4” / 4-3.5” duct, 2-4” duct & 2-4” / 4-3.5”	Brush College Road, Approximately located at 57+50 to 62+50 RT & Faries Parkway 209+70 to 212+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T MH	Brush College Road, Approximately located at 63+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T 2-4” / 4-3.5” & 4-4” MTD duct	Brush College Road, Approximately located at 63+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper/fiber cables beginning	Brush College Road, Approximately located at 66+00 to 68+00 RT crossing from East to West	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T MH (Manhole)	Brush College Road, Approximately located at 55+60 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T 4-4” MTD & 1-4” PVC duct	Brush College Road, Approximately located at 55+60 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	All of the buried copper/fiber cables, pedestals &	Brush College Road, Approximately located at 68+00 to 73+50 RT	Before Construction

	HH (handhole)		
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T 1-4” PVC duct & buried copper cable & pedestals	Brush College Road, Approximately located at 73+50 to 74+70 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T MH (Manhole)	Faries Parkway, Approximately located at 212+25 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T 6-4” PVC duct	Faries Parkway, Approximately located at 212+00 to 213+25 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T MH (Manhole)	Faries Parkway, Approximately located at 214+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T 6-4” PVC & 4-4” PVC duct	Faries Parkway, Approximately located at 213+25 to 219+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper cable & pedestal	Faries Parkway, Approximately located at 213+75 to 214+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T MH (Manhole)	Faries Parkway, Approximately located at 222+10 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	4-4” PVC duct	Faries Parkway, Approximately located at 213+25 to 219+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper/fiber cables & pedestals	Faries Parkway, Approximately located at 221+90 to 223+75 RT	Before Construction

ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T 6-4” PVC & 4-4” PVC duct	Faries Parkway, Approximately located at 224+75 to 230+50 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T MH (Manhole)	Faries Parkway, Approximately located at 232+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T 4-4” PVC duct	Faries Parkway, Approximately located at 230+50 to 234+00 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T aerial copper cable (co-located on Ameren power poles)	Jug Handle Connector, Approximately located at 301+75 to 306+50 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T aerial copper cable (co-located on Ameren power poles)	East Logan Street, Approximately located at 601+50 to 607+50 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T aerial copper cable (co-located on Ameren power poles)	North James Street, Approximately located at 607+50 to 407+75 RT	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper cable	Cemetery Access Road crosses from West to East @ approximate station 900+20	Before Construction
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	Telephone	Brush College Road (Watermain Stationing) Approximately located at 24+35 to 26+92	Before Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 47+78.12, 8.17’ LT to 53+08.35, 47.50’ LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 52+54.94, 29.30’ LT to 52+91.99, 31.50’ RT	During Construction

City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 47+78.12, 8.17' LT to 53+08.35, 47.50' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 52+54.94, 29.30' LT to 52+91.99, 31.50' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 55+11.29, 8.57' RT to 55+83.80, 5.05' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 55+40.15, 34.59' RT to 55+83.80, 5.05' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 55+49.89, 71.35' LT 55+82.70, 2.11' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 55+49.77, 60.79' LT 60+87.87, 29.74' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 55+82.70, 2.11' LT to 56+66.94, 1.95' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 56+61.80, 3.67' RT to 56+66.94, 1.95' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 57+19.19, 15.03' RT to 61+73.57, 88.05' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 58+93.07, 30.20' RT to 59+13.34, 49.19' LT	During Construction

City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 59+40.23, 177.41' RT to 59+65.67, 89.67' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 59+65.67, 89.67' RT to 60+02.31, 93.79' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 60+02.31, 93.79' RT to 60+04.00, 49.86' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 62+78.58, 27.63' LT to 65+79.87, 40.20' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 66+58.18, 29.81 LT to 67+03.83, 32.21' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 69+11.49, 65.15' RT to 69+77.91, 68.30' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Brush College Road, Approximately located at 69+76.23, 73.84' LT to 69+77.91, 68.30' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer	Brush College Road, Approximately located at 69+77.65, 46.62' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 205+42.11, 40.87' RT to 209+89.01, 164.38' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 206+00.08, 0.42' RT to 206+00.33, 40.14' RT	During Construction

City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 207+91.69, 2.86' LT to 208+52.73, 74.16' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 213+01.52, 43.35' LT to 222+41.79, 39.43' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 222+41.79, 39.43' LT to 223+00.90, 90.88' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 213+71.07, 31.08' RT to 235+46.12, 24.70' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 215+29.96, 41.94' LT to 215+32.97, 17.06' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 229+46.24, 14.91' RT to 230+01.56, 28.44' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 231+15.23, 25.71' RT to 231+18.13, 22.39' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 233+72.51, 19.14' LT to 233+97.78, 31.53' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Faries Parkway, Approximately located at 233+72.51, 19.14' LT to 235+23.17, 24.26' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	72" pipe/culvert	Faries Parkway, Approximately located at 223+18.42, 430.49 LT to 226+62.18, 15.08' RT	During Construction

City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	East Logan St, Approximately located at 603+53.79, 18.36' LT to 603+79.55, 21.32' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	East Logan St, Approximately located at 604+60.39, 27.03' LT to 605+12.02, 25.80' LT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	East Logan St, Approximately located at 607+83.96, 15.54' RT to 608+11.35, 15.09' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	East Logan St, Approximately located at 608+82.76, 15.17' RT to 609+06.58, 14.94' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	E Harrison (W Leg), Approximately located at 801+89.18, 33.26' RT to 802+06.53, 25.21' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	E Harrison (W Leg), Approximately located at 802+35.81, 16.03' RT to 802+70.52, 17.01' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	E Harrison (E Leg), Approximately located at 704+79.39, 13.62' LT to 704+80.00, 13.91' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	E Harrison (E Leg), Approximately located at 706+38.20, 46.16' RT to 708+52.77, 46.64' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	E Harrison (E Leg), Approximately located at 706+67.32, 122.72' RT to 707+09.33, 37.46' RT	During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	E Harrison (E Leg), Approximately located at 708+17.21, 14.45' RT to 708+41.15, 36.20' RT	During Construction

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	Address	e-mail address
AT&T	Janet C. Ahern	630.573.6414	**1000 Commerce Drive, Floor 1 Oak Brook, IL 60523**	ja1763@att.com
Comcast	Martha Gieras	224.229.5862	**Unknown**	martha_gieras@comcast.com
Ameren IP South	Nathan Hill	618.301.5327	**Collinsville, IL 62234**	nhill2@ameren.com
Ameren Gas Transmission	Kevin Verhofstad	W: 217.424.8278 C: 217.358.9228	**370 S. Main Street Decatur, IL 62521**	KVerhofstad@ameren.com
Ameren Gas Distribution	Marty Behrens	T: 217.424.8745 C: 309.826.0851	**2460 N. Jasper Street Decatur, IL 62526**	MBehrens@ameren.com
Ameren Electric Transmission	Mike Kurecki	217.424.6430	**370 S. Main St. (MC: C-25) Decatur, IL 62523**	MKurecki@ameren.com
Ameren Electric Distribution	Marty Behrens	W: 217.424.8745 C: 309.826.0851	**2460 N. Jasper Street Decatur, IL 62526**	MBehrens@ameren.com

Ameren Electrical Substation	Andrew Bonny	Unknown	**Unknown**	ABonny@ameren.com
City of Decatur	Don Cisco	W: 217.424.2747 C: 217.521.7570	**One Gary K. Anderson Plaza Decatur, IL 62523**	dcisco@decaturil.gov
Metro Communication	Jason Koonce	217.728.3605	**8 South Washington St Sullivan IL, 61951**	jkoonce@metrocomm.com
Sanitary District of Decatur	Don Miller	217.422.6931 X216	**One Gary K. Anderson Plaza Decatur, IL 62523**	donm@ssd.dst.il.us

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.

All Stages

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Brush College Road Approximately located at 48+17.20, 55.56' RT to 49+39.51, 50.00' LT	ADM Overhead Utility Pipe	Vertical clearance of 22' 2"	ADM	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Brush College Road Approximately located at 46+59.43, 2.01' LT to 49+08.43, 10.22' LT	Water	Due to increase in embankment potential relocation of valves and pipe may be required.	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at 69+83.51, 21.63' LT to 75+85.08, 21.84' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at 69+60.84, 14.43' RT to 76+25.85, 18.52' RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at 69+60.84, 14.43' RT to 76+25.85, 18.52' RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at 75+41.09, 96.26' LT to 76+41.47, 96.00' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at 75+85.08, 21.84' LT to 76+15.47, 7.01' RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Brush College Road Approximately located at 76+15.46, 18.49' RT to 76+15.47, 7.01' RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at 75+91.16, 75.98' RT to 75+91.30, 18.36' RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at 65+61.92, 529.69' LT to 66+18.20, 33.55' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Faries Parkway Approximately located at 205+18.73, 15.14' RT to 209+12.86, 3.22' RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Faries Parkway Approximately located at 210+94.25, 0.72’ RT to 235+41.47, 2.05’ RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Harrison (E Leg) Approximately located at 700+14.38, 21.46' LT to 708+86.38, 22.40 LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Harrison (E Leg) Approximately located at 706+42.65, 27.69' LT to 706+43.05, 21.78' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Harrison (E Leg) Approximately located at 703+46.01, 21.75' LT to 703+46.03, 27.73' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Harrison (E Leg) Approximately located at 703+07.91, 28.92' RT to 703+08.24, 22.11' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Harrison (E Leg) Approximately located at 700+46.47, 21.49' LT to 700+46.89, 43.75' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at 46+59.43 to 59+24.40, 42.00' LT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer	City of Decatur Or Sanitary District	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at. 59+29.45, 46.29' LT to 62+05.30, 71.94' LT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer	City of Decatur Or Sanitary District	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Brush College Road Approximately located at. 62+05.30, 71.94' LT to 62+05.70, 123.47' RT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer	City of Decatur Or Sanitary District	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
E Harrison (E Leg) Approximately located at 700+00, 23.23' RT to 709+34.85, 22.06' RT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer	City of Decatur Or Sanitary District	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at 47+23.74, 13.66' RT to 59+13.80, 33.17' LT	Sanitary Force Main	Due to increase in embankment potential relocation of valves and pipe may be required to allow access for maintenance	ADM	City of Decatur will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road, Approximately located at 52+25.48, 77.60' RT	Underground Gas	2" Gas is under proposed design of watermain	Ameren IP South Ameren Gas	Ameren will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road, Approximately located at 52+22.44, 10.13' RT to 52+28.69, 153.00' RT	Underground Gas	Gas in right lane till retaining wall. Watermain excavation in that area	Ameren IP South Ameren Gas	Ameren will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Olive Street Approximately located at 500+01.25, 29.69'RT to 504+83.65, 16.37' RT	Underground Gas	2" Gas	Ameren IP South Ameren Gas	Ameren will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Olive Street Approximately located at 503+58.83, 132.88' RT to 503+63.45, 16.36' RT	Underground Gas	2" Gas	Ameren IP South Ameren Gas	Ameren will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Jug Handle Connector, Approximately located at 300+55.84, 123.80' LT to 300+58.84, 229.15' LT	Underground Gas	4" Gas	Ameren IP South Ameren Gas	Ameren will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Jug Handle Connector, Approximately located at 300+24.94, 113.85' LT to 303+70.32, 47.22' RT	Underground Gas	4" Gas	Ameren IP South Ameren Gas	Ameren will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Faries Parkway, Approximately located at 207+92.06, 38.22 LT to 208+90.03, 36.19 LT	Underground Gas	2" Gas	Ameren IP South Ameren Gas	Ameren will watch and protect their facilities during excavation, rip rap placement, and installation of supporting and adjacent utilities at these locations.
Brush College Road Approximately located at STA.48+26, 66' RT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 67+97, 92' RT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Brush College Road Approximately located at 70+08, 91' LT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 72+06, 90' LT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 72+19, 41' RT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 73+60, 42' RT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 74+00, 89 LT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Faries Parkway, Approximately located at 215+81, 139' RT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Faries Parkway, Approximately located at 224+84, 57' LT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Faries Parkway, Approximately located at 225+05, 57' LT	Guy Anchor Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Faries Parkway, Approximately located at 225+32, 42' LT	Guy Anchor Electric Distribution n	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Faries Parkway, Approximately located at 225+57, 42' LT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Faries Parkway, Approximately located at 228+48, 40' LT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Faries Parkway, Approximately located at 231+75, 43' LT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Faries Parkway, Approximately located at 231+95, 43' LT	Guy Anchor Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
E Harrison (E Leg) Approximately located at 701+87, 30' RT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
E Harrison (E Leg) Approximately located at 703+34, 30' RT	Overhead Electric Distribution	Utility Pole	Ameren IP South	Ameren IP South will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 46+59.43, 6.70' LT to 47+78.12, 8.17' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 47+69.79, 31.68' LT to 55+49.73, 70.30' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 65+63.62, 308.37' LT to 65+87.82, 299.82' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Brush College Road Approximately located at 65+70.45, 84.83' LT to 66+35.37, 91.05' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 66+03.83, 213.42' LT to 66+28.54, 61.24' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 72+02.26, 41.58' RT to 79+08.16, 41.79' RT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 76+00.46, 37.00' LT to 79+96.70, 37.40' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Brush College Road Approximately located at 74+78.48, 73.73' LT to 78+19.52, 70.66' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Faries Parkway Approximately located at 206+00.12, 0.41' RT to 206+10.31, 37.36' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Faries Parkway Approximately located at 207+90.70, 37.50' LT to 207+91.83, 2.63' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
Faries Parkway Approximately located at 207+87.96, 111.88' LT to 209+95.34, 147.56' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
E Harrison (E Leg) Approximately located at 700+46.55, 47.31' LT to 708+58.13, 47.66' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
E Harrison (E Leg) Approximately located at 700+68.29, 44.87' LT to 707+56.75, 40.56' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.
E Harrison (E Leg) Approximately located at 707+56.75, 40.56' LT to 708+17.21, 17.45' RT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	City of Decatur will provide their contractor to watch and protect their facilities during excavation and construction at these locations.

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	Janet C. Ahern	630.573.6414	ja1763@att.com
Comcast	Martha Gieras	224.229.5862	martha_gieras@comcast.com
ADM Utility	Mike Marin	217.451.3622	mike.marin@adm.com

Ameren IP South	Nathan Hill	618.301.5327	nhill2@ameren.com
Ameren Gas Transmission	Kevin Verhofstad	W: 217.424.8278 C: 217.358.9228	KVerhofstad@ameren.com
Ameren Gas Distribution	Marty Behrens	W: 217.424.8745 C: 309.826.0851	MBehrens@ameren.com
Ameren Electric Transmission	Mike Kurecki	217.424.6430	MKurecki@ameren.com
Ameren Electric Distribution	Marty Behrens	W: 2174248745 C: 3098260851	MBehrens@ameren.com
Ameren Electric Substation	Andrew Bonny	NA	ABonny@ameren.com
City of Decatur	Don Cisco	W: 217.424.2747 C: 217.521.7570	dcisco@decaturil.gov
Metro Communication	Jason Koonce	217.728.3605	jkoonce@metrocomm.com
Sanitary District of Decatur	Don Miller	217.422.6931 X216	donm@ssd.dst.il.us

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

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

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

LIST OF INCIDENTALS TO THE PAY ITEMS

The Contractor's attention is called to several specific incidental work items as noted on the Contract Plans and Special Provisions and in addition to the lists in the Standard Specifications. Listed below is a listing of these items for general information only. The list is not intended to be all-inclusive and, therefore, the Contractor is responsible to perform all work according to the Plans, Special Provisions, and the Standard Specifications.

PAY ITEM NUMBER	ITEM	INCIDENTAL WORK
44000100	PAVEMENT REMOVAL	Saw Cut (full depth) shall be required at the joint between pavement, sidewalk, curb, and curb and gutter, median, driveway pavement, and hot-mix asphalt surfaces. Removal of any existing pavement fabric. Removal of existing pavement markings located on reconstructed pavement areas.
44000600	SIDEWALK REMOVAL	Saw Cut (full depth) shall be required at the joint between pavement, sidewalk, curb, and curb and gutter, median, driveway pavement, and hot-mix asphalt surfaces. Removal of any existing pavement fabric.
50105220	PIPE CULVERT REMOVAL	In-stream work
54213660	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 15"	In-stream work
54213669	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 24"	In-stream work
54213687	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 42"	In-stream work
54213693	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 48"	In-stream work
60605000	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	Saw Cut (full depth) shall be required at the joint between pavement, sidewalk, curb, and curb and gutter, median, driveway pavement, and hot-mix asphalt surfaces. Removal of any existing pavement fabric.

PAY ITEM NUMBER	ITEM	INCIDENTAL WORK
70400100	TEMPORARY CONCRETE BARRIER	Cost of anchoring temporary traffic control barrier to proposed bridge decks
88800100	PEDESTRIAN PUSH BUTTON	Pedestrian push button signs
X5510100	STORM SEWER REMOVAL	the cost of permanently plugging the main storm sewer At all locations where minor storm sewers at blind connections are to be removed.
X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	Removal or covering of existing regulatory, warning, and/or traffic signs which interfere with construction and/or conflict with construction traffic patterns. Cost of supplying, erecting, and maintaining barricades, warning lights, and standard signs along the detour route.
Water Mains of type and size specified	WATER MAIN FITTINGS AND CONNECTIONS	All necessary piping fittings and adapters for a complete installation, contractor shall also verify exact location, depth, material, and size of existing water main and piping before ordering new materials. The contractor shall connect to existing water mains, regardless of location, depth, and material, at no additional cost. Tees and fittings shall be rolled as needed for construction to accommodate connections, avoid utility conflicts, etc. The cost shall be considered incidental to the fitting or tee being installed.
Contract	STABILIZED CONSTRUCTION ENTRANCE	All work associated with the installation and maintenance shall be incidental to the Contract.
Contract	CONCRETE WASHOUTS	All work associated with the installation and maintenance shall be incidental to the Contract.

PAY ITEM NUMBER	ITEM	INCIDENTAL WORK
Contract	TEMPORARY EROSION CONTROL	Compliance with all permit requirements at the direction of the permitting agencies.
Contract	WATER MAIN RELOCATION	Adjustment of hydrant bury depth to accommodate the piping and ground elevations shown in the plans.

ACCESSIBLE PEDESTRIAN SIGNALS (APS) (BDE)

Effective: April 1, 2003
Revised: April 1, 2020

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

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

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

Audible Indications. A pushbutton locator tone shall sound at each pushbutton.

If two accessible pedestrian pushbuttons are placed less than 10 ft (3 m) apart or placed on the same pole, the audible walk indication shall be a speech walk message.

A clear, verbal message shall be used to communicate the pedestrian walk interval. This message shall sound throughout the WALK interval only. The verbal message shall be modeled after: "'Street Name.' Walk Sign is on to cross "Street Name'." No other messages shall be used to denote the WALK interval.

Where two accessible pedestrian pushbuttons are separated by at least 10 ft (3 m), the walk indication shall be an audible percussive tone. It shall repeat at 8 to 10 ticks per second with a dominant frequency of 880 Hz.

Automatic volume adjustments in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA. Locator tone and verbal messages shall be no more than 5 dB louder than ambient sound.

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

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

Signage. A sign shall be located immediately above the pedestrian pushbutton and parallel to the crosswalk controlled by the pushbutton. The sign shall conform to one of the following standard MUTCD designs: R10-3, R10-3a, R10-3e, R10-3i, R10-4, and R10-4a.

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

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

Method of Measurement. This work will be measured for payment as each, per pushbutton.

Basis of Payment. This work will be paid for at the contract unit price per each for ACCESSIBLE PEDESTRIAN SIGNALS.

80099

AGGREGATE SUBGRADE IMPROVEMENT (BDE)

Effective: April 1, 2012
Revised: April 1, 2016

Add the following Section to the Standard Specifications:

"SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT

303.01 Description. This work shall consist of constructing an aggregate subgrade improvement.

303.02 Materials. Materials shall be according to the following.

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

Note 1. Crushed RAP, from either full depth or single lift removal, may be mechanically blended with aggregate gradations CS 01, CS 02, and RR 01 but shall not exceed 40 percent of the total product. The top size of the RAP shall be less than 4 in. (100 mm) and well graded.

Note 2. RAP having 100 percent passing the 1 1/2 in. (37.5 mm) sieve and being well graded, may be used as capping aggregate in the top 3 in. (75 mm) when aggregate gradations CS 01, CS 02, or RR 01 are used in lower lifts.

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

303.03 Equipment. The vibratory machine shall be according to Article 1101.01, or as approved by the Engineer.

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

303.05 Placing Aggregate. The maximum nominal lift thickness of aggregate gradations CA 02, CA 06, or CA 10 shall be 12 in. (300 mm). The maximum nominal lift thickness of aggregate gradations CS 01, CS 02, and RR 01 shall be 24 in. (600 mm).

303.06 Capping Aggregate. The top surface of the aggregate subgrade shall consist of a minimum 3 in. (75 mm) of aggregate gradations CA 06 or CA 10. When the contract specifies that a granular subbase is to be placed on the aggregate subgrade improvement, the 3 in. (75 mm) of capping aggregate shall be the same gradation and may be placed with the underlying aggregate subgrade improvement material.

303.07 Compaction. All aggregate lifts shall be compacted to the satisfaction of the Engineer. If the moisture content of the material is such that compaction cannot be obtained, sufficient water shall be added so that satisfactory compaction can be obtained.

303.08 Finishing and Maintenance of Aggregate Subgrade Improvement. The aggregate subgrade improvement shall be finished to the lines, grades, and cross sections shown on the plans, or as directed by the Engineer. The aggregate subgrade improvement shall be maintained in a smooth and compacted condition.

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

303.10 Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) 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.** 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 subgrade material is required, gravel may be used below the first 12 in (300 mm) of subgrade.

(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 subgrade thickness less than or equal to 12 in. (300 mm) shall be CA 2, CA 6, CA 10, or CS 01.

The coarse aggregate gradation for total subgrade thickness more than 12 in. (300 mm) shall be CS 01 or CS 02 as shown below or RR 01 according to Article 1005.01(c).

	COARSE AGGREGATE SUBGRADE GRADATIONS				
Grad No.	Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 02		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 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 02		100	80 ± 10	25 ± 15	

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

80274

BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE)

Effective: November 2, 2006
Revised: August 1, 2017

Description. Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract.

The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments that are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, joint filling/sealing, or extra work paid for at a lump sum price or by force account.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$

Where: CA = Cost Adjustment, $.
BPI_P = Bituminous Price Index, as published by the Department for the month the work is performed, $/ton ($/metric ton).
BPI_L = Bituminous Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, $/ton ($/metric ton).
$\%AC_V$ = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC_V will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC_V and undiluted emulsified asphalt will be considered to be 65% AC_V.
Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards: Q, tons = $A \times D \times (G_{mb} \times 46.8) / 2000$. For HMA mixtures measured in square meters: Q, metric tons = $A \times D \times (G_{mb} \times 1) / 1000$. When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different G_{mb} and % AC_V.

For bituminous materials measured in gallons: Q, tons = V x 8.33 lb/gal x SG / 2000
For bituminous materials measured in liters: Q, metric tons = V x 1.0 kg/L x SG / 1000

Where: A = Area of the HMA mixture, sq yd (sq m).
D = Depth of the HMA mixture, in. (mm).
G_{mb} = Average bulk specific gravity of the mixture, from the approved mix design.

V = Volume of the bituminous material, gal (L).
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI_L and BPI_P in excess of five percent, as calculated by:

Percent Difference = $\{(BPI_L - BPI_P) \div BPI_L\} \times 100$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

80173

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

CONCRETE END SECTIONS FOR PIPE CULVERTS (BDE)

Effective: January 1, 2013
Revised: April 1, 2016

Description. This work shall consist of constructing cast-in-place concrete and precast concrete end sections for pipe culverts. These end sections are shown on the plans as Highway Standard 542001 or 542011. This work shall be according to Section 542 of the Standard Specifications except as modified herein.

Materials. Materials shall be according to the following Articles of Division 1000 – Materials of the Standard Specifications.

Item	Article/Section
(a) Portland Cement Concrete (Note 1)	1020
(b) Precast Concrete End Sections (Note 2)	
(c) Coarse Aggregate (Note 3)	1004.05
(d) Structural Steel (Note 4)	1006.04
(e) Anchor Bolts and Rods (Note 5)	1006.09
(f) Reinforcement Bars	1006.10(a)
(g) Nonshrink Grout	1024.02
(h) Chemical Adhesive Resin System	1027
(i) Mastic Joint Sealer for Pipe	1055
(j) Hand Hole Plugs	1042.16

Note 1. Cast-in-place concrete end sections shall be Class SI, except the 14 day mix design shall have a compressive strength of 5000 psi (34,500 kPa) or a flexural strength of (800 psi) 5500 kPa and a minimum cement factor of 6.65 cwt/cu yd (395 kg/cu m).

Note 2. Precast concrete end sections shall be according to Articles 1042.02 and 1042.03(b)(c)(d)(e) of the Standard Specifications. The concrete shall be Class PC according to Section 1020, and shall have a minimum compressive strength of 5000 psi (34,000 kPa) at 28 days.

Joints between precast sections shall be produced with reinforced tongue and groove ends according to the requirements of ASTM C 1577.

Note 3. The granular bedding placed below a precast concrete end section shall be gradation CA 6, CA 9, CA 10, CA 12, CA 17, CA 18, or CA 19.

Note 4. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable.

Note 5. The anchor rods for the culvert ties shall be according to the requirements of ASTM F 1554, Grade 105 (Grade 725).

CONSTRUCTION REQUIREMENTS

The concrete end sections may be precast or cast-in-place construction. Toe walls shall be either precast or cast-in-place, and shall be in proper position and backfilled according to the applicable paragraphs of Article 502.10 of the Standard Specifications prior to the installation of the concrete end sections. If soil conditions permit, cast-in-place toe walls may be poured directly against the soil. When poured directly against the soil, the clear cover of the sides and bottom of the toe wall shall be increased to 3 in. (75 mm) by increasing the thickness of the toe wall.

(a) Cast-In-Place Concrete End Sections. Cast-in-place concrete end sections shall be constructed according to the requirements of Section 503 of the Standard Specifications and as shown on the plans.

(b) Precast Concrete End Sections. When the concrete end sections will be precast, shop drawings detailing the slab thickness and reinforcement layout shall be submitted to the Engineer for review and approval.

The excavation and backfilling for precast concrete end sections shall be according to the requirements of Section 502 of the Standard Specifications, except a layer of granular bedding at least 6 in. (150 mm) in thickness shall be placed below the elevation of the bottom of the end section. The granular bedding shall extend a minimum of 2 ft (600 mm) beyond each side of the end section.

Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 2/3 turn on one of the nuts. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut.

When individual, precast end sections are placed side-by-side for a multi-pipe culvert installation, a 3 in. (75 mm) space shall be left between adjacent end section walls and the space(s) filled with Class SI concrete.

Method of Measurement. This work will be measured for payment as each, with each end of each culvert being one each.

Basis of Payment. This work will be paid for at the contract unit price per each for CONCRETE END SECTION, STANDARD 542001 or CONCRETE END SECTION, 542011, of the pipe diameter and slope specified.

80311

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 _____% of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

(a) The bidder documents enough DBE participation has been obtained to meet the goal or,

(b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:
http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

(a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.

(1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

(2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

(6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

(7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the

bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

(c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.

(d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:

(1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.

(e) DBE as a material supplier:

(1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.

(3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

(a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBE.UP@illinois.gov.

(b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

(1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or

(2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or

(3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

(1) The listed DBE subcontractor fails or refuses to execute a written contract;

(2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;

(3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;

(4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;

(5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.

(6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;

(7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;

(8) The listed DBE is ineligible to receive DBE credit for the type of work required;

(9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;

(10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

(f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.

(g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be

made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

(h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

80029

DISPOSAL FEES (BDE)

Effective: November 1, 2018

Replace Articles 109.04(b)(5) – 109.04(b)(8) of the Standard Specifications with the following:

"(5) Disposal Fees. When the extra work performed includes paying for disposal fees at a clean construction and demolition debris facility, an uncontaminated soil fill operation or a landfill, the Contractor shall receive, as administrative costs, an amount equal to five percent of the first $10,000 and one percent of any amount over $10,000 of the total approved costs of such fees.

(6) Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

(7) Statements. No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with itemized statements of the cost of such force account work. Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

Itemized statements at the cost of force account work shall be detailed as follows.

a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman. Payrolls shall be submitted to substantiate actual wages paid if so requested by the Engineer.

b. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.

c. Quantities of materials, prices and extensions.

d. Transportation of materials.

e. Cost of property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions, and social security tax.

(8) Work Performed by an Approved Subcontractor. When extra work is performed by an approved subcontractor, the Contractor shall receive, as administrative costs, an amount equal to five percent of the total approved costs of such work with the minimum payment being $100.

(9) All statements of the cost of force account work shall be furnished to the Engineer not later than 60 days after receipt of the Central Bureau of Construction form “Extra Work Daily Report”. If the statement is not received within the specified time frame, all demands for payment for the extra work are waived and the Department is released from any and all such demands. It is the responsibility of the Contractor to ensure that all statements are received within the specified time regardless of the manner or method of delivery.”

80402

DOWEL BAR INSERTER (BDE)

Effective: January 1, 2017
Revised: January 1, 2018

Add the following to Article 420.03 of the Standard Specifications.

"(l) Mechanical Dowel Bar Inserter .....1103.20"

Revise the first paragraph of Article 420.05(b)(1) of the Supplemental Specifications to read:

"Preformed or Drilled Holes. If applicable, the tie bars shall be installed after the dowel bars have been tested with the MIT Scan-2 device according to Article 420.05(c)(2)b.2. The tie bars shall be installed with a nonshrink grout or chemical adhesive providing a minimum pull-out strength as follows."

Revise Article 420.05(c) of the Standard Specifications to read:

"(c) Transverse Contraction Joints. Transverse contraction joints shall consist of planes of weakness created by sawing grooves in the surface of the pavement and shall include load transfer devices consisting of dowel bars. Transverse contraction joints shall be according to the following."

Revise Article 420.05(c)(2) of the Standard Specifications to read:

"(2) Dowel Bars. Dowel Bars shall be installed parallel to the centerline of the pavement and parallel to the proposed pavement surface. Installation shall be according to one of the following methods.

a. Dowel Bar Assemblies. The assembly shall act as a rigid unit with each component securely held in position relative to the other members of the assembly. The entire assembly shall be held securely in place by means of nails which shall penetrate the stabilized subbase. At least ten nails shall be used for each 10, 11, or 12 ft (3, 3.3, or 3.6 m) section of assembly.

Metal stakes shall be used instead of nails, with soil or granular subbase. The stakes shall loop over or attach to the top parallel spacer bar of the assembly and penetrate the subgrade or subbase at least 12 in. (300 mm).

At the location of each dowel bar assembly, the subgrade or subbase shall be reshaped and re-tamped when necessary.

Prior to placing concrete, any deviation of the dowel bars from the correct horizontal or vertical alignment (horizontal skew or vertical tilt) greater than 3/8 in. in 12 in (9 mm in 300 mm) shall be corrected and a light coating of oil shall be uniformly applied to all dowel bars.

Care shall be exercised in depositing the concrete at the dowel bar assemblies so the horizontal and vertical alignment will be retained.

b. Dowel Bar Insertion. The dowel bars may be placed in the pavement slab with a mechanical dowel bar inserter (DBI) attached to a formless paver for pavements ≥ 7.0 in. (175 mm) in thickness. A light coating of oil shall be uniformly applied to all dowel bars.

The DBI shall insert the dowel bars with vibration into the plastic concrete after the concrete has been struck off and consolidated without deformation of the slab. After the bars have been inserted, the concrete shall be refinished and no voids shall exist around the dowel bars. The forward movement of the paver shall not be interrupted by the inserting of the dowel bars.

The location of each row of dowel bars shall be marked in a manner to facilitate where to insert the bars, and where to saw the transverse joint.

1. Placement Tolerances for Dowel Bars. The DBI shall place the dowel bars in the concrete pavement within the following tolerances.

(a.) Longitudinal Translation (Mislocation). Longitudinal translation (mislocation) shall be defined as the position of the center of the dowel bar along the longitudinal axis, in relation to the sawed joint.

The quality control tolerance for longitudinal translation shall not exceed 2.0 in (50 mm). If this tolerance is exceeded, adjustments shall be made to the paving operation.

Any joint having two or more dowel bars with an embedment length less than 4.0 in. (100 mm) within 12 in. (300 mm) of the same wheelpath will be considered unacceptable. The left and right wheelpaths shall be determined by excluding the middle 2.5 ft (0.8 m) of the pavement lane, and by excluding the outer 1.0 ft (0.3 m) measured from each pavement lane edge. Any joint having an average dowel bar embedment length less than 5.25 in. (130 mm) will also be considered unacceptable. Embedment length shall be defined as the length of dowel bar embedded on the short side of the sawed joint. An unacceptable joint shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

(b.) Horizontal Translation (Mislocation). Horizontal translation (mislocation) shall be defined as the difference in the actual dowel bar location parallel to the longitudinal or edge joint from its theoretical position as shown on the plans.

The quality control tolerance for horizontal translation shall not exceed 2.0 in. (50 mm). If this tolerance is exceeded, adjustments shall be made to the paving operation.

Any joint having a dowel bar with a translation greater than 4.0 in. (100 mm) will be considered unacceptable, but may remain in place unless the Engineer determines the joint will not function. If the joint is unable to remain in place, the joint shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

(c.) Vertical Translation (Mislocation). Vertical translation (mislocation) shall be defined as the difference in the vertical position of the dowel bar relative to the theoretical midpoint of the slab.

The quality control tolerance for vertical translation shall be as shown in the following table. If these tolerances are exceeded, adjustments shall be made to the paving operation.

Pavement Thickness	Dowel Bar Diameter	Vertical Translation Tolerance Above Midpoint	Vertical Translation Tolerance Below Midpoint
≥7 in. to <8 in. (≥175 mm to <200 mm)	1.25 in. (31 mm)	0.25 in. (6 mm)	0.5 in. (13 mm)
≥8 in. to <9 in. (≥200 mm to <225 mm)	1.50 in. (38 mm)	0.25 in. (6 mm)	0.5 in. (13 mm)
≥9 in. to <10 in. (≥225 mm to <250 mm)	1.50 in. (38 mm)	0.75 in. (19 mm)	0.75 in. (19 mm)
≥10 in. (≥250 mm)	1.50 in. (38 mm)	0.75 in. (19 mm)	1.0 in. (25 mm)

Any joint having a dowel bar with top concrete cover less than T/3, where T is slab thickness, will be considered unacceptable. Any joint having 2 or more dowel bars with bottom concrete cover less than 2.0 in. (50 mm) will also be considered unacceptable. An unacceptable joint shall be replaced with a minimum of 6 ft (1.8 m) of pavement according to Section 442 for Class B patches.

(d.) Vertical Tilt or Horizontal Skew (Misalignment). Vertical tilt or horizontal skew (misalignment) shall be defined as the difference in position of the dowel bar ends with respect to each other. Vertical tilt is measured in the vertical axis whereas horizontal skew is measured in the horizontal axis. Misalignment shall be measured in terms of a joint score. The joint score shall be defined as the degree of misalignment evaluated for a single

transverse joint for each lane of pavement. The joint score shall be determined as follows:

$$Joint\ Score = \left(1 + \left(\frac{x}{x-n}\right)\sum_{i=1}^{x-n} W_i\right)$$

where:

W_i = weighting factor (Table 1) for dowel *i*
x = number of dowels in a single joint
n = number of dowels excluded from the joint score calculation due to measurement interference

Single Dowel Misalignment – The degree of misalignment applicable to a single dowel bar, calculated as:

$$Single\ Dowel\ Misalignment = \sqrt{(Horizontal\ Skew)^2 + (Vertical\ Tilt)^2}$$

Table 1. Weighting Factors in Joint Score Determination	
Single Dowel Bar Misalignment (SDM)	W, Weighting Factor
SDM ≤ 0.6 in. (15 mm)	0
0.6 in. (15 mm) < SDM ≤ 0.8 in. (20 mm)	2
0.8 in. (20 mm) < SDM ≤ 1 in. (25 mm)	4
1 in. (25 mm) < SDM ≤ 1.5 in. (38 mm)	5
1.5 in. (38 mm) < SDM	10

The quality control tolerance for vertical tilt or horizontal skew shall not exceed 0.6 in. (15 mm). If the tolerance is exceeded for either one, adjustments shall be made to the paving operation.

Any joint having a dowel bar with a vertical tilt or horizontal skew greater than 1.5 in. (38 mm) shall be cut. If more than one dowel bar is required to be cut in the joint, the joint will be considered unacceptable and shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

Single dowel bar misalignment shall be controlled to provide the joint scores shown in the following table.

Number of Dowel Bars in the Joint	Maximum Joint Score
< 5	4
≥ 5 but ≤ 9	8
> 9	12

A joint score greater than the specified maximum will be considered locked. Three consecutive joints with a score greater than the specified maximum total score will all be considered unacceptable.

Three consecutive locked joints shall be corrected by selecting one joint and cutting a dowel bar. Preference shall be given to cutting a dowel bar within the middle 2.5 ft (0.8 m) of the pavement lane to avoid the wheelpaths. If none of the three locked joints will have a joint score less than or equal to the specified maximum after selecting one dowel bar to cut, one of the joints shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

(e.) For unacceptable work, the Contractor may propose alternative repairs for consideration by the Engineer.

2. Testing of Dowel Bar Placement. The placement of the dowel bars shall be tested within 24 hours of paving with a calibrated MIT Scan-2 device according to "Use of Magnetic Tomography Technology to Evaluate Dowel Placement" (Publication No. FHWA-IF-06-006) by the Federal Highway Administration.

A trained operator shall perform the testing, and all testing shall be performed in the presence of the Engineer. The device shall be calibrated to the type and size dowel bar used in the work according to the manufacturer's instructions. Calibration documentation shall be provided to the Engineer prior to construction. The device shall be recalibrated and/or validate readings as required by the Engineer. The device may be utilized as a process control and make necessary adjustments to ensure the dowel bars are placed in the correct location.

(a.) Test Section. Prior to start of production paving, a test section consisting of 30 transverse joints shall be constructed. The test section may be performed on the actual pavement, but production paving shall not begin until an acceptable test section has been constructed. The test section will be considered acceptable when all of the following are met:

(1.) 90 percent of the dowel bars meet the quality control tolerance for longitudinal, horizontal, or vertical translation (mislocation);

(2.) 90 percent of the dowel bars meet the quality control tolerance for vertical tilt or horizontal skew deviation (misalignment); and

(3.) none of the joints are considered unacceptable prior to a corrective measure for mislocation or misalignment.

If the test section fails, another test section consisting of 30 joints shall be constructed.

The test section requirement may be waived by the Engineer if the Contractor has constructed an acceptable test section and successfully used the DBI on a Department contract within the same calendar year.

(b.) Production Paving. After the test section is approved, production paving may begin. The mislocation and misalignment of each dowel bar for the first ten joints constructed, and every tenth joint thereafter, shall be tested.

If two consecutive days of paving result in 5 percent or more of the joints on each day being unacceptable prior to a corrective measure, production paving shall be discontinued and a new test section shall be constructed.

If any joint is found to be unacceptable prior to a corrective measure, testing of additional joints on each side of the unacceptable joint shall be performed until acceptable joints are found.

(c.) Test Report. Test reports shall be provided to the Engineer within two working days of completing each day's testing. The test report shall include the following.

(1.) Contract number, placement date, county-route-section, direction of traffic, scan date, Contractor, and name of individual performing the tests.

(2.) Provide the standard report generated from the on-board printer of the imaging technology used for every dowel and joint measured.

(3.) For every dowel measured, provide the joint identification number, lane number and station, dowel bar number or x-location, direction of testing and reference joint location/edge location, longitudinal translation, horizontal translation, vertical translation, vertical tilt, and horizontal skew.

(4.) Identify each dowel bar with a maximum longitudinal, horizontal, or vertical translation that has been exceeded. Identify each dowel bar with a maximum vertical tilt or horizontal skew deviation that has been exceeded.

(5.) Joint Score Details: Provide the joint identification number, lane number, station, and calculated joint score for each joint.

(6.) Locked Joint Identification: Identify each joint where the maximum joint score is exceeded.

(d.) Exclusions. Exclude the following from dowel bar mislocation and misalignment measurements.

(1.) Transverse construction joints (headers).

(2.) Dowel bars within 24 in. (610 mm) of metallic manholes, inlets, metallic castings, or other nearby or underlying steel reinforced objects.

(3.) The outside dowel bar when tie bars are installed with mechanical equipment in fresh concrete. For tie bar installations involving preformed or drilled holes, installation of the tie bar shall be performed after testing with the MIT Scan-2 device.

(4.) Joints located directly under high voltage power lines.

(5.) Subject to the approval of the Engineer, any other contributors to magnetic interference.

(e.) Deficiency Deduction. When the Contractor has cut 25 dowel bars to correct unacceptable joints, the Contractor shall be liable and shall pay to the Department a deficiency deduction of $500.00 for the cost of the bars. Thereafter, an additional deficiency deduction of $20.00 for each additional bar cut will be assessed."

Add the following to Section 1103 of the Standard Specifications.

"**1103.20 Mechanical Dowel Bar Inserter.** The mechanical dowel bar inserter (DBI) shall be self-contained and supported on the formless paver with the ability to move separately from the paver. The DBI shall be equipped with insertion forks along with any other devices necessary for finishing the concrete the full width of the pavement. The insertion forks shall have the ability to vibrate at a minimum frequency of 3000 VPM."

80378

ELECTRIC SERVICE INSTALLATION (BDE)

Effective: January 1, 2020

Revise Article 804.04 of the Standard Specifications to read:

"**804.04 Installation.** The electric service installation shall extend from the existing utility owned transformer to the point of cable termination of the incoming power at the controller enclosure.

The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work required to complete the electric service installation while meeting the requirements of the utility. Unless otherwise required by the utility, grounding shall be according to Section 806, raceways shall be according to Sections 810 – 812, and conductors shall be according to Sections 817 – 818.

The electric service installation shall include an appropriate service disconnect and when required, metering. Metering shall include all metering material, including potential and current transformers. The metering and service disconnect shall be installed remote to the controller enclosure where possible.

The total length of aerial and underground service between the controller enclosure and utility transformer shall not exceed 250 ft (76 m). The service pole or structure and controller shall be located adjacent to the right-of-way line or a minimum distance of 30 ft (9 m) from the edge of pavement. The exact location will be established by the Engineer.

Specific requirements for aerial and underground electric service installations shall be as follows.

(a) Aerial Electric Service. The aerial service shall be mounted on a wood pole, along with a weatherhead, disconnect switch, meter base (if required), and all appurtenances to complete the installation.

The wood pole shall be installed according to Article 830.03(c), except the pole shall be a minimum of 25 ft (7.5 m) in length and shall be increased as necessary to maintain ground clearance.

(b) Underground Electric Service.

(1) Ground Mounted Service. The ground mounted service shall be installed on a corrosion resistant pedestal or structure with a service disconnect switch, meter base (if required), and all appurtenances to complete the installation.

(2) Pole Mounted Service. The service shall be installed on a 12 ft (3.7 m) wood pole on which the meter base (if required) and service disconnect switch shall be channel

mounted. The wood pole shall be installed according to Article 830.03(c), except the pole shall be plumb.

(c) Conduit Protection. Feeder conductors in PVC conduit on the service pole or structure shall be protected by galvanized steel "U" guard. When on a pole, the "U" guard shall be attached with 3/8 in. x 3 in. (M10 x 75 mm) galvanized steel lag bolts."

Revise Article 804.05 of the Standard Specifications to read:

"**804.05 Basis of Payment.** This work will be paid for at the contract unit price per each for ELECTRIC SERVICE INSTALLATION.

For aerial electric service, work on the utility side of the weatherhead at the service pole will be paid for according to Article 109.04 when not provided by the utility company.

For underground electric service, work on the utility side of the service pole, pedestal, or structure where the service cables penetrate the ground will be paid for according to Article 109.04 when not provided by the utility company.

Any charges by the utility company to provide electrical service will be paid for according to Article 109.05."

80421

EMULSIFIED ASPHALTS (BDE)

Effective: August 1, 2019

Revise Article 1032.06 of the Standard Specifications to read:

"**1032.06 Emulsified Asphalts.** Emulsified asphalts will be accepted according to the current Bureau of Materials Policy Memorandum, "Emulsified Asphalt Acceptance Procedure". These materials shall be homogeneous and shall show no separation of asphalt after thorough mixing, within 30 days after delivery, provided separation has not been caused by freezing. They shall coat the aggregate being used in the work to the satisfaction of the Engineer and shall be according to the following requirements.

(a) Anionic Emulsified Asphalt. Anionic emulsified asphalts RS-1, RS-2, HFRS-2, SS-1h, and SS-1 shall be according to AASHTO M 140, except as follows.

(1) The cement mixing test will be waived when the emulsion is being used as a tack coat.

(2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(b) Cationic Emulsified Asphalt. Cationic emulsified asphalts CRS-1, CRS-2, CSS-1h, and CSS-1 shall be according to AASHTO M 208, except as follows.

(1) The cement mixing test will be waived when the emulsion is being used as a tack coat.

(2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(c) High Float Emulsion. High float emulsions HFE-90, HFE-150, and HFE-300 are medium setting and shall be according to the following table.

Test	HFE-90	HFE-150	HFE-300
Viscosity, Saybolt Furol, at 122 °F (50 °C), (AASHTO T 59), SFS [1/]	50 min.	50 min.	50 min.
Sieve Test, No. 20 (850 µm), retained on sieve, (AASHTO T 59), %	0.10 max.	0.10 max.	0.10 max.
Storage Stability Test, 1 day, (AASHTO T 59), %	1 max.	1 max.	1 max.
Coating Test (All Grades), (AASHTO T 59), 3 minutes	stone coated thoroughly		
Distillation Test, (AASHTO T 59):			
Residue from distillation test to 500 °F (260 °C), %	65 min.	65 min.	65 min.
Oil distillate by volume, %	7 max.	7 max.	7 max.

Characteristics of residue from distillation test to 500 °F (260 °C): Penetration at 77 °F (25 °C), (AASHTO T 49), 100 g, 5 sec, dmm	90-150	150-300	300 min.
Float Test at 140 °F (60 °C), (AASHTO T 50), sec.	1200 min.	1200 min.	1200 min.

1/ The emulsion shall be pumpable.

(d) Penetrating Emulsified Prime. Penetrating Emulsified Prime (PEP) shall be according to AASHTO T 59, except as follows.

Test	Result
Viscosity, Saybolt Furol, at 77 °F (25 °C), SFS	75 max.
Sieve test, retained on No. 20 (850 µm) sieve, %	0.10 max.
Distillation to 500 °F (260 °C) residue, %	38 min.
Oil distillate by volume, %	4 max.

The PEP shall be tested according to the current Bureau of Materials Illinois Laboratory Test Procedure (ILTP), "Sand Penetration Test of Penetrating Emulsified Prime (PEP)". The time of penetration shall be equal to or less than that of MC-30. The depth of penetration shall be equal to or greater than that of MC-30.

(e) Delete this subparagraph.

(f) Polymer Modified Emulsified Asphalt. Polymer modified emulsified asphalts, e.g. SS-1hP, CSS-1hP, CRS-2P (formerly CRSP), CQS-1hP (formerly CSS-1h Latex Modified) and HFRS-2P (formerly HFP) shall be according to AASHTO M 316, except as follows.

(1) The cement mixing test will be waived when the polymer modified emulsion is being used as a tack coat.

(2) CQS-1hP (formerly CSS-1h Latex Modified) emulsion for micro-surfacing treatments shall use latex as the modifier.

(3) Upon examination of the storage stability test cylinder after standing undisturbed for 24 hours, the surface shall show minimal to no white, milky colored substance and shall be a homogenous brown color throughout.

(4) The distillation for all polymer modified emulsions shall be performed according to AASHTO T 59, except the temperature shall be 374 ± 9 °F (190 ± 5 °C) to be held for a period of 15 minutes and measured using an ASTM 16F (16C) thermometer.

(5) The specified temperature for the Elastic Recovery test for all polymer modified emulsions shall be 50.0 ± 1.0 °F (10.0 ± 0.5 °C).

(6) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(g) Non-Tracking Emulsified Asphalt. Non-tracking emulsified asphalt NTEA (formerly SS-1vh) shall be according to the following.

Test	Requirement
Saybolt Viscosity at 77 °F (25 °C), (AASHTO T 59), SFS	20-100
Storage Stability Test, 24 hr, (AASHTO T 59), %	1 max.
Residue by Distillation, 500 ± 10 °F (260 ± 5 °C), or Residue by Evaporation, 325 ± 5 °F (163 ± 3 °C), (AASHTO T 59), %	50 min.
Sieve Test, No. 20 (850 µm), (AASHTO T 59), %	0.3 max.
Tests on Residue from Evaporation	
Penetration at 77 °F (25 °C), 100 g, 5 sec, (AASHTO T 49), dmm	40 max.
Softening Point, (AASHTO T 53), °F (°C)	135 (57) min.
Ash Content, (AASHTO T 111), % 1/	1 max.

1/ The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent

The different grades are, in general, used for the following.

Grade	Use
SS-1, SS-1h, RS-1, RS-2, CSS-1, CRS-1, CRS-2, CSS-1h, HFE-90, SS-1hP, CSS-1hP, NTEA (formerly SS-1vh)	Tack Coat
PEP	Prime Coat
RS-2, HFE-90, HFE-150, HFE-300, CRS-2P (formerly CRSP), HFRS-2P (formerly HFP), CRS-2, HFRS-2	Bituminous Surface Treatment
CQS-1hP (formerly CSS-1h Latex Modified)	Micro-Surfacing Slurry Sealing Cape Seal”

80415

ENGINEER'S FIELD OFFICE AND LABORATORY (BDE)

Effective: January 1, 2020

Revise the last sentence of the first paragraph of Article 670.01 of the Standard Specifications to read:

"The building shall remain available for use until released by the Engineer."

Revise the fifth and sixth paragraphs of Article 670.02 of the Standard Specifications to read:

"Sanitary facilities shall include hot and cold potable running water, lavatory and toilet as an integral part of the office where available. A portable toilet, if necessary, shall be serviced once per week. Solid waste disposal consisting of two waste baskets and an outside trash container of sufficient size to accommodate a weekly provided pick-up service.

In addition, the following furniture and equipment meeting the approval of the Engineer shall be furnished."

Revise Article 670.02(b) through 670.02(r) of the Standard Specifications to read:

"(b) One desk with minimum working surface of 48 x 72 in. (1.2 x 1.8 m).

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

(d) Table(s) and chairs capable of seating 10 people.

(e) One equipment cabinet of minimum inside dimension of 44 in. (1100 mm) high x 24 in. (600 mm) wide x 30 in. (750 mm) deep with lock. The walls shall be of steel with a 3/32 in. (2 mm) minimum thickness with concealed hinges and enclosed lock constructed in such a manner as to prevent entry by force. The cabinet assembly shall be permanently attached to a structural element of the field office in a manner to prevent theft of the entire cabinet.

(f) One refrigerator with a minimum size of 14 cu ft (0.40 cu m) with a freezer unit.

(g) One electric desk type tape printing calculator.

(h) A minimum of two communication paths. The configuration shall include:

(1) Internet Connection. An internet service connection with a wireless router capable of providing service to a minimum of five devices. The internet service shall be for unlimited data with a minimum internet data download speed of 25 megabits per second. For areas where this minimum download speed is not available, the maximum speed available for the area shall be provided.

(2) Telephone Line. One landline touch tone telephone with voicemail or answering machine. The telephone shall have an unpublished number.

(i) One plain paper wireless color printer capable of reproducing prints up to 11 x 17 in. (280 x 432 mm) with an automatic feed tray. Separate paper trays for letter size and 11 x 17 in. (280 x 432 mm) paper shall be provided. The wireless printer shall also be equipped to copy in color and scan documents.

(j) One electric water cooler dispenser.

(k) One first-aid cabinet fully equipped.

(l) One microwave oven (minimum 700 watt) with a turntable and 1 cu ft (0.03 cu m) minimum capacity.

(m) One fire-proof safe, 0.5 cu ft (0.01 cu m) minimum capacity.

(n) One electric paper shredder.

(o) One post mounted rain gauge, located on the project site for each 5 miles (8 km) of project length."

Revise the last sentence of the first paragraph of Articles 670.04 and 670.05 of the Standard Specifications to read:

"Doors and windows shall be equipped with locks."

Revise Article 670.04(c) through 670.04(n) of the Standard Specifications to read:

"(c) Two folding chairs.

(d) One equipment cabinet of minimum inside dimension of 44 in. (1100 mm) high x 24 in. (600 mm) wide x 30 in. (750 mm) deep with lock. The walls shall be of steel with a 3/32 in. (2 mm) minimum thickness with concealed hinges and enclosed lock constructed to prevent entry by force. The cabinet assembly shall be permanently attached to a structural element of the field office to prevent theft of the entire cabinet.

(e) A minimum of two communication paths. The configuration shall include:

(1) Internet Connection. An internet service connection with a wireless router capable of providing service to a minimum of five devices. The internet service shall be for unlimited data with a minimum internet download speed of 25 megabits per second. For areas where this minimum download speed is not available, the maximum speed available for the area shall be provided.

(2) Telephone Line. One land line touch tone telephone with voicemail or answering machine. The telephone shall have an unpublished number.

(f) One electric desk type tape printing calculator.

(g) One first-aid cabinet fully equipped.

(h) One plain paper wireless color printer capable of reproducing prints up to 11 x 17 in. (280 x 432 mm) with an automatic feed tray. Separate paper trays for letter size and 11 x 17 in. (280 x 432 mm) paper shall be provided. The wireless printer shall also be equipped to copy in color and scan documents.

(i) A portable toilet meeting Federal, State, and local health department requirements shall be provided, maintained clean and in good working condition, and shall be stocked with lavatory and sanitary supplies at all times. The portable toilet shall be serviced once per week.

(j) One electric water cooler dispenser.

(k) One refrigerator with a minimum size of 14 cu ft (0.45 cu m) with a freezer unit.

(l) One microwave oven (minimum 700 watt) with a turntable and 1 cu ft (0.03 cu m) minimum capacity."

Revise Article 670.05(f) of the Standard Specifications to read:

"(f) One landline touch tone telephone with voicemail or an answering machine. The telephone shall have an unpublished number."

Delete the last sentence of the second paragraph of Article 670.06 of the Standard Specifications.

Revise the fifth sentence of the first paragraph of Article 670.07 of the Supplemental Specifications to read:

"This price shall include all utility costs and shall reflect the salvage value of the building or buildings, equipment, and furniture which remain the property of the Contractor after release by the Engineer, except the Department will pay that portion of the monthly long distance and monthly local telephone, when combined, exceed $250."

80423

FUEL COST ADJUSTMENT (BDE)

Effective: April 1, 2009
Revised: August 1, 2017

Description. Fuel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in fuel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any category of work will make that category of work exempt from fuel cost adjustment.

General. The fuel cost adjustment shall apply to contract pay items as grouped by category. The adjustment shall only apply to those categories of work checked "Yes", and only when the cumulative plan quantities for a category exceed the required threshold. Adjustments to work items in a category, either up or down, and extra work paid for by agreed unit price will be subject to fuel cost adjustment only when the category representing the added work was subject to the fuel cost adjustment. Extra work paid for at a lump sum price or by force account will not be subject to fuel cost adjustment. Category descriptions and thresholds for application and the fuel usage factors which are applicable to each are as follows:

(a) Categories of Work.

(1) Category A: Earthwork. Contract pay items performed under Sections 202, 204, and 206 including any modified standard or nonstandard items where the character of the work to be performed is considered earthwork. The cumulative total of all applicable item plan quantities shall exceed 25,000 cu yd (20,000 cu m). Included in the fuel usage factor is a weighted average 0.10 gal/cu yd (0.50 liters/cu m) factor for trucking.

(2) Category B: Subbases and Aggregate Base Courses. Contract pay items constructed under Sections 311, 312 and 351 including any modified standard or nonstandard items where the character of the work to be performed is considered construction of a subbase or aggregate, stabilized or modified base course. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is a 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.

(3) Category C: Hot-Mix Asphalt (HMA) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 355, 406, 407 and 482 including any modified standard or nonstandard items where the character of the work to be performed is considered HMA bases, pavements and shoulders. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.

(4) Category D: Portland Cement Concrete (PCC) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 353, 420, 421 and 483 including any

modified standard or nonstandard items where the character of the work to be performed is considered PCC base, pavement or shoulder. The cumulative total of all applicable item plan quantities shall exceed 7500 sq yd (6000 sq m). Included in the fuel usage factor is 1.20 gal/cu yd (5.94 liters/cu m) factor for trucking.

(5) Category E: Structures. Structure items having a cumulative bid price that exceeds $250,000 for pay items constructed under Sections 502, 503, 504, 505, 512, 516 and 540 including any modified standard or nonstandard items where the character of the work to be performed is considered structure work when similar to that performed under these sections and not included in categories A through D.

(b) Fuel Usage Factors.

English Units

Category	Factor	Units
A - Earthwork	0.34	gal / cu yd
B – Subbase and Aggregate Base courses	0.62	gal / ton
C – HMA Bases, Pavements and Shoulders	1.05	gal / ton
D – PCC Bases, Pavements and Shoulders	2.53	gal / cu yd
E – Structures	8.00	gal / $1000

Metric Units

Category	Factor	Units
A - Earthwork	1.68	liters / cu m
B – Subbase and Aggregate Base courses	2.58	liters / metric ton
C – HMA Bases, Pavements and Shoulders	4.37	liters / metric ton
D – PCC Bases, Pavements and Shoulders	12.52	liters / cu m
E – Structures	30.28	liters / $1000

(c) Quantity Conversion Factors.

Category	Conversion	Factor
B	sq yd to ton	0.057 ton / sq yd / in depth
	sq m to metric ton	0.00243 metric ton / sq m / mm depth
C	sq yd to ton	0.056 ton / sq yd / in depth
	sq m to metric ton	0.00239 m ton / sq m / mm depth
D	sq yd to cu yd	0.028 cu yd / sq yd / in depth
	sq m to cu m	0.001 cu m / sq m / mm depth

<u>Method of Adjustment</u>. Fuel cost adjustments will be computed as follows.

$CA = (FPI_P - FPI_L) \times FUF \times Q$

Where: CA = Cost Adjustment, $

FPI_P = Fuel Price Index, as published by the Department for the month the work is performed, $/gal ($/liter)

FPI_L = Fuel Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, $/gal ($/liter)

FUF = Fuel Usage Factor in the pay item(s) being adjusted

Q = Authorized construction Quantity, tons (metric tons) or cu yd (cu m)

The entire FUF indicated in paragraph (b) will be used regardless of use of trucking to perform the work.

Basis of Payment. Fuel cost adjustments may be positive or negative but will only be made when there is a difference between the FPI_L and FPI_P in excess of five percent, as calculated by:

Percent Difference = $\{(FPI_L - FPI_P) \div FPI_L\} \times 100$

Fuel cost adjustments will be calculated for each calendar month in which applicable work is performed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

80229

GEOTECHNICAL FABRIC FOR PIPE UNDERDRAINS AND FRENCH DRAINS (BDE)

Effective: November 1, 2019

Revise Article 1080.01(a) of the Standard Specifications to read:

"(a) Fabric Materials. Fabric materials shall be as follows.

(1) Knitted Fabric. Knitted fabric envelope shall be Type A according to ASTM D 6707 and be a continuous one piece knitted polymeric material that fits over the pipe underdrain like a sleeve. It shall be free from any chemical treatment or coating that might significantly reduce porosity and permittivity.

(2) Woven or Nonwoven Fabric. The fabric shall be Class 3 according to AASHTO M 288 and consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape like character) shall not be permitted. The yarns or filaments shall be dimensionally stable (i.e. maintain their relative position with respect to each other) and resistant to delamination. The yarns or filaments shall be free from any chemical treatment or coating that might significantly reduce porosity and permittivity.

(3) Physical Properties. The physical properties for knitted, woven, and nonwoven fabrics shall be according to the following.

PHYSICAL PROPERTIES			
	Knitted 1/	Woven 2/	Nonwoven 2/
Grab Strength, lb (N) ASTM D 4632 3/	--	180 (800) min.	112 (500) min.
Elongation/Grab Strain, % ASTM D 4632 3/	--	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 3/	--	67 (300) min.	40 (180) min.
Puncture Strength, lb (N) ASTM D 6241 3/	180 (800) min.	370 (1650) min.	222 (990) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 4/	30 (0.60) max.	40 (0.425) max.	40 (0.425) max.
Permittivity, sec^{-1} ASTM D 4491	1.0 min.		
Ultraviolet Stability, % retained strength after 500 hours of exposure ASTM D 4355	--	50 min.	50 min.

1/ Manufacturer's certification to meet test requirements.

2/ NTPEP results or manufacturer's certification to meet test requirements.

3/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

4/ Values represent the maximum average roll value."

Revise Article 1080.05 of the Standard Specifications to read:

"**1080.05 Geotechnical Fabric for French Drains and Pipe Underdrains, Type 2.** Geotechnical fabric for french drains and pipe underdrains, Type 2 shall be Class 3 according to AASHTO M 288 and consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) shall not be permitted. The yarns or filaments shall be dimensionally stable (i.e. maintain their relative position with respect to each other) and resistant to delamination. The yarns or filaments shall be free from any chemical treatment or coating that might significantly reduce porosity and permittivity.

The fabric shall be according to the following.

PHYSICAL PROPERTIES 1/		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 2/	180 (800) min.	112 (500) min.
Elongation/Grab Strain, % ASTM D 4632 2/	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 2/	67 (300) min.	40 (180) min.
Puncture Strength, lb (N) ASTM D 6241 2/	370 (1650) min.	222 (990) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 3/	60 (0.25) max.	
Permittivity, sec^{-1} ASTM D 4491	0.2 min.	
Ultraviolet Stability % retained strength after 500 hours of exposure - ASTM D 4355	50 min.	

1/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.

2/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

3/ Values represent the maximum average roll value."

80417

HOT-MIX ASPHALT – BINDER AND SURFACE COURSE (BDE)

Effective: July 2, 2019
Revised: November 1, 2019

Description. This work shall consist of constructing a hot-mix asphalt (HMA) binder and/or surface course on a prepared base. Work shall be according to Sections 406 and 1030 of the Standard Specifications, except as modified herein.

Materials. Add the following after the second paragraph of Article 1003.03(c):

"For mixture IL-9.5FG, at least 67 percent of the required fine aggregate fraction shall consist of either stone sand, slag sand, steel slag sand, or combinations thereof meeting FA 20 gradation."

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	CA 11 1/
	SMA 12.5 2/	CA 13, CA 14, or CA 16
	SMA 9.5 2/	CA 13 or CA 16 3/
	IL-9.5	CA 16
	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 stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation and mineral filler to meet the approved mix design and the mix requirements noted herein.

3/ The specified coarse aggregate gradations may be blended."

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

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

	Surface Courses	IL-9.5, IL-9.5FG, SMA 12.5, SMA 9.5”

Mixture Design. Revise the table in Article 1030.04(a)(1) and add SMA 9.5 and IL-9.5FG mixture compositions as follows:

“HIGH ESAL, MIXTURE COMPOSITION (% PASSING) 1/						
Sieve Size	SMA 12.5 5/		SMA 9.5 5/		IL-9.5FG	
	min.	max.	min.	max.	min.	max.
1 in. (25 mm)						
3/4 in. (19 mm)		100		100		
1/2 in. (12.5 mm)	90	99	95	100		100
3/8 in. (9.5 mm)	50	85	70	95	90	100
#4 4.75 mm)	20	40	30	50	60	75
#8 (2.36 mm)	16	24 4/	20	30	45	60
#16 (1.18 mm)				21	25	40
#30 (600 μm)				18	15	30
#50 (300 μm)				15	8	15
#100 (150 μm)					6	10
#200 (75 μm)	8.0	11.0 3/	8.0	11.0 3/	4.0	6.5
#635 (20 μm)		≤ 3.0		≤ 3.0		
Ratio of Dust/Asphalt Binder						1.0

1/ Based on percent of total aggregate weight.

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

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

4/ When establishing the adjusted job mix formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above 24 percent.

5/ When the bulk specific gravity (Gsb) of the component aggregates vary by more than 0.2, the blend gradations shall be based on volumetric percentage."

Revise the table in Article 1030.04(b)(1) to read:

"VOLUMETRIC REQUIREMENTS, High ESAL				
Ndesign	Voids in the Mineral Aggregate (VMA), % minimum			Voids Filled with Asphalt Binder (VFA),%
	IL-19.0	IL-9.5 IL-9.5FG	IL-4.75 1/	
50	13.5	15.0	18.5	65 - 78 2/
70				65 – 75 3/
90				

1/ Maximum draindown for IL-4.75 shall be 0.3 percent.

2/ VFA for IL-4.75 shall be 76-83 percent.

3/ VFA for IL-9.5FG shall be 65-78 percent."

Revise the table in Article 1030.04(b)(3) to read:

"VOLUMETRIC REQUIREMENTS, SMA 12.5 1/ and SMA 9.5 1/				
ESALs (million)	Ndesign	Design Air Voids Target, %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
≤ 10	50	4.0	16.0	75 – 80
> 10	80	4.0	17.0	75 – 80

1/ Maximum draindown shall be 0.3 percent."

Quality Control/Quality Assurance (QC/QA). Revise the third paragraph of Article 1030.05(d)(3) 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."

Add the following paragraphs to the end of Article 1030.05(d)(3):

"Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement). Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.

b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced 10 ft (3 m) apart longitudinally along the unconfined pavement edge and centered at the random density test location.

When a longitudinal joint sealant (LJS) is applied, longitudinal joint density testing will not be required on the joint(s) sealed."

Revise the second table in Article 1030.05(d)(4) and its notes to read:

"DENSITY CONTROL LIMITS			
Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density, minimum
IL-4.75	Ndesign = 50	93.0 – 97.4 % 1/	91.0%
IL-9.5FG	Ndesign = 50 - 90	93.0 – 97.4 %	91.0%
IL-9.5	Ndesign = 90	92.0 – 96.0 %	90.0%
IL-9.5, IL-9.5L,	Ndesign < 90	92.5 – 97.4 %	90.0%
IL-19.0	Ndesign = 90	93.0 – 96.0 %	90.0%
IL-19.0, IL-19.0L	Ndesign < 90	93.0 2/ – 97.4 %	90.0%
SMA	Ndesign = 50 or 80	93.5 – 97.4 %	91.0%

1/ Density shall be determined by cores or by correlated, approved thin lift nuclear gauge.

2/ 92.0 % when placed as first lift on an unimproved subgrade."

Equipment. Add the following to Article 1101.01 of the Standard Specifications:

"(h) Oscillatory Roller. The oscillatory roller shall be self-propelled and provide a smooth operation when starting, stopping, or reversing directions. The oscillatory roller shall be able to operate in a mode that will provide tangential impact force with or without vertical impact force by using at least one drum. The oscillatory roller shall be equipped with water tanks and sprinkling devices, or other approved methods, which shall be used to wet the drums to prevent material pickup. The drum(s) amplitude and frequency of the tangential and vertical impact force shall be approximately the same in each direction and meet the following requirements:

(1) The minimum diameter of the drum(s) shall be 42 in. (1070 mm);

(2) The minimum length of the drum(s) shall be 57 in. (1480 mm);

(3) The minimum unit static force on the drum(s) shall be 125 lb/in. (22 N/m); and

(4) The minimum force on the oscillatory drum shall be 18,000 lb (80 kN)."

CONSTRUCTION REQUIREMENTS

Add the following to Article 406.03 of the Standard Specifications:

"(j) Oscillatory Roller .....1101.01"

Revise the third paragraph of Article 406.05(a) to read:

"All depressions of 1 in. (25 mm) or more in the surface of the existing pavement shall be filled with binder. At locations where heavy disintegration and deep spalling exists, the area shall be cleaned of all loose and unsound material, tacked, and filled with binder (hand method)."

Revise Article 406.05(c) to read.

"(c) Binder (Hand Method). Binder placed other than with a finishing machine will be designated as binder (hand method) and shall be compacted with a roller to the satisfaction of the Engineer. Hand tamping will be permitted when approved by the Engineer."

Revise the special conditions for mixture IL-4.75 in Article 406.06(b)(2)e. to read:

"e. The mixture shall be overlaid within 5 days of being placed."

Revise Article 406.06(d) to read:

"(d) Lift Thickness. The minimum compacted lift thickness for HMA binder and surface courses shall be as follows.

MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19) - over HMA surfaces [1/] 1 (25) - over PCC surfaces [1/]
IL-9.5FG	1 1/4 (32)
IL-9.5, IL-9.5L	1 1/2 (38)
SMA 9.5	1 1/2 (38)
SMA 12.5	2 (51)
IL-19.0, IL-19.0L	2 1/4 (57)

1/ The maximum compacted lift thickness for mixture IL-4.75 shall be 1 1/4 in. (32 mm)."

Revise Table 1 and Note 3/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

"TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA				
	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Binder and Surface [1/]	V_D, P [3/], T_B, 3W, O_T, O_B	P [3/], O_T, O_B	V_S, T_B, T_F, O_T	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
IL-4.75 and SMA [4/ 5/]	T_B, 3W, O_T	- -	T_F, 3W, O_T	
Bridge Decks [2/]	T_B	- -	T_F	As specified in Articles 582.05 and 582.06.

3/ A vibratory roller (V_D) or oscillatory roller (O_T or O_B) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder."

Add the following to EQUIPMENT DEFINITION in Article 406.07(a) contained in the Errata of the Supplemental Specifications:

"O_T - Oscillatory roller, tangential impact mode. Maximum speed is 3.0 mph (4.8 km/h) or 264 ft/min (80 m/min).

O_B - Oscillatory roller, tangential and vertical impact mode, operated at a speed to produce not less than 10 vertical impacts/ft (30 impacts/m)."

Basis of Payment. Replace the second through the fifth paragraphs of Article 406.14 with the following:

"HMA binder and surface courses will be paid for at the contract unit price per ton (metric ton) for MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS; HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the Ndesign specified; HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and Ndesign specified; HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition, friction aggregate, and Ndesign specified."

80416

HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT (BDE)

Effective: August 1, 2018
Revised: November 1, 2019

Add the following to Article 406.02 of the Standard Specifications.

"(d) Longitudinal Joint Sealant (LJS) .....1032"

Add the following to Article 406.03 of the Standard Specifications.

"(k) Longitudinal Joint Sealant (LJS) Pressure Distributor (Note 2)
(l) Longitudinal Joint Sealant (LJS) Melter Kettle (Note 3)

Note 2. When a pressure distributor is used to apply the LJS, the distributor shall be equipped with a heating and recirculating system along with a functioning auger agitating system or vertical shaft mixer in the hauling tank to prevent localized overheating. The distributor shall be equipped with a guide or laser system to aid in proper placement of the LJS application.

Note 3. When a melter kettle is used to transport and apply the LJS, the melter kettle shall be an oil jacketed double-boiler with agitating and recirculating systems. Material from the kettle may be dispensed through a pressure feed wand with an applicator shoe or through a pressure feed wand into a hand-operated thermal push cart."

Revise Article 406.06(g)(2) of the Standard Specifications to read:

"(2) Longitudinal Joints. Unless prohibited by stage construction, any HMA lift shall be complete before construction of the subsequent lift. The longitudinal joint in all lifts shall be at the centerline of the pavement if the roadway comprises two lanes in width, or at lane width if the roadway is more than two lanes in width.

When stage construction prohibits the total completion of a particular lift, the longitudinal joint in one lift shall be offset from the longitudinal joint in the preceding lift by not less than 3 in. (75 mm). The longitudinal joint in the surface course shall be at the centerline of the pavement if the roadway comprises two lanes in width, or at lane width if the roadway is more than two lanes in width.

A notched wedge longitudinal joint shall be used between successive passes of HMA binder course that has a difference in elevation of greater than 2 in. (50 mm) between lanes on pavement that is open to traffic.

The notched wedge longitudinal joint shall consist of a 1 to 1 1/2 in. (25 to 38 mm) vertical notch at the lane line, a 9 to 12 in. (230 to 300 mm) wide uniform taper sloped toward and extending into the open lane, and a second 1 to 1 1/2 in. (25 to 38 mm) vertical notch at the outside edge.

The notched wedge longitudinal joint shall be formed by the strike off device on the paver. The wedge shall then be compacted by the joint roller.

Tack coat shall be applied to the entire surface of the notched wedge joint immediately prior to placing the adjacent lift of binder. The material shall be uniformly applied at a rate of 0.05 to 0.1 gal/sq yd (0.2 to 0.5 L/sq m).

When the use of longitudinal joint sealant (LJS) is specified, the surface to which the LJS is applied shall be thoroughly cleaned and dry. The LJS may be placed before or after the tack coat. When placed after the tack coat, the tack shall be fully cured prior to placement of the LJS.

The LJS shall be applied in a single pass with a pressure distributor, melter kettle, or hand applied from a roll. At the time of installation, the pavement surface temperature and the ambient temperature shall be a minimum of 40 °F (4 °C) and rising.

The LJS shall be applied at a width of 18 in. (450 mm) ± 1 1/2 in. (38 mm) and centered ± 2 in. (± 50 mm) under the joint of the next HMA lift to be constructed. If the LJS flows more than 2 in. (50 mm) from the initial placement width, LJS placement shall stop and remedial action shall be taken.

When starting another run of LJS placement, suitable release paper shall be placed over the previous application of LJS to prevent doubling up of thickness of LJS.

The application rate of LJS shall be according to the following.

LJS Application Table			
Overlay Thickness in. (mm)	Coarse Graded Application Rate 1/ (IL-19.0, IL-19.0L, IL-9.5, IL-9.5L, IL-4.75) lb/ft (kg/m)	Fine Graded Application Rate 1/ lb/ft (kg/m)	SMA Mixtures 1/ 2/
3/4 (19)	0.88 (1.31)		
1 (25)	1.15 (1.71)		
1 1/4 (32)	1.31 (1.95)	0.88 (1.31)	
1 1/2 (38)	1.47 (2.19)	0.95 (1.42)	1.26 (1.88)
1 3/4 (44)	1.63 (2.43)	1.03 (1.54)	1.38 (2.06)
2 (50)	1.80 (2.68)	1.11 (1.65)	1.51 (2.25)
≥ 2 1/4 (60)	1.96 (2.92)		

1/ The application rate has a surface demand for liquid included within it. The thickness of the LJS may taper from the center of the application to a lesser thickness on the edge of the application, provided the correct width and application rate are maintained.

2/ If the joint is between SMA and either Coarse Graded or Fine Graded, the SMA rate shall be used.

The Contractor shall furnish to the Engineer a bill of lading for each tanker supplying material to the project. The application rate of LJS shall be verified within the first 1000 ft (300 m) of the day's placement and every 12,000 ft (3600 m) thereafter. A suitable paper or pan shall be placed at a random location in the path of the LJS. After application of the LJS, the paper or pan shall be picked up, weighed, and the application rate calculated. The tolerance between the application rate shown in the LJS Application Table and the calculated rate shall be ± 10 percent. The LJS shall be replaced in the area where the sample was taken.

A 1 qt (1 L) sample shall be taken from the pressure distributor or melting kettle at the jobsite once for each contract and sent to the Central Bureau of Materials.

The LJS shall be suitable for construction traffic to drive on without pickup or tracking of the LJS within 30 minutes of placement. If pickup or tracking occurs, LJS placement shall stop and damaged areas shall be repaired.

Prior to paving, the Contractor shall ensure the paver end plate and grade control device is adequately raised above the finished height of the LJS.

The LJS shall not flush to the final surface of the HMA pavement."

Add the following paragraph after the second paragraph of Article 406.13(b) of the Standard Specifications.

"Application of longitudinal joint sealant (LJS) will be measured for payment in place in feet (meters)."

Add the following paragraph after the first paragraph of Article 406.14 of the Standard Specifications.

"Longitudinal joint sealant will be paid for at the contract unit price per foot (meter) for LONGITUDINAL JOINT SEALANT."

Add the following to Section 1032 of the Standard Specifications.

"**1032.12 Longitudinal Joint Sealant (LJS).** Longitudinal joint sealant (LJS) will be accepted according to the current Bureau of Materials and Physical Research Policy Memorandum, "Performance Graded Asphalt Binder Acceptance Procedure" with the following exceptions: Article 3.1.9 and 3.4.1.4 of the policy memorandum will be excluded. The bituminous material used for the LJS shall be according to the following table. Elastomers shall be added to a base asphalt and shall be either a styrene-butadiene diblock or triblock copolymer without oil extension, or a styrene-butadiene rubber. Air blown asphalt, acid modification, or other modifiers will not be allowed. LJS in the form of pre-formed rollout banding may also be used.

Test	Test Requirement	Test Method
Dynamic shear @ 88°C (unaged), G*/sin δ, kPa	1.00 min.	AASHTO T 315
Creep stiffness @ -18°C (unaged), Stiffness (S), MPa m-value	300 max. 0.300 min.	AASHTO T 313
Ash, %	1.0 – 4.0	AASHTO T 111
Elastic Recovery, 100 mm elongation, cut immediately, 25°C, %	70 min.	ASTM D 6084 (Procedure A)
Separation of Polymer, Difference in °C of the softening point (ring and ball)	3 max.	ITP Separation of Polymer from Asphalt Binder”

80398

HOT-MIX ASPHALT – MIXTURE DESIGN VERIFICATION AND PRODUCTION (MODIFIED FOR I-FIT) (BDE)

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

Description. This special provision requires the Illinois Flexibility Index Test (I-FIT) be used during mixture design verification and production testing for all hot-mix asphalt (HMA) mixtures.

Mixture Design. Add the following to the list of referenced standards in Article 1030.04 of the Standard Specifications:

"Illinois Modified AASHTO TP 124 Determining the Fracture Potential of Asphalt Mixtures Using the Illinois Flexibility Index Test (I-FIT)"

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

"(d) Verification Testing. During mixture design, prepared samples shall be submitted to the District laboratory 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/	Tensile Strength Testing
Binder	total of 3 - 160 mm tall bricks	6 - 95 mm tall bricks
Surface	total of 4 - 160 mm tall bricks	6 - 95 mm tall bricks

Low ESAL – Required Samples for Verification Testing		
Mixture	I-FIT Testing 1/ 2/	Tensile Strength Testing
Binder	1 - 160 mm tall brick	6 - 95 mm tall bricks
Surface	2 - 160 mm tall bricks	6 - 95 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.

New and renewal mix designs shall meet the following requirements for verification testing.

(1) Hamburg Wheel Test. The maximum allowable rut depth shall be 0.5 in. (12.5 mm). The minimum number of wheel passes at the 0.5 in. (12.5 mm) rut depth criteria shall

be based on the high temperature binder grade of the mix as specified in the mix requirements table of the plans.

Illinois Modified AASHTO T 324 Requirements [1/]	
PG Grade	Minimum Number of Wheel Passes
PG 58-xx (or lower)	5,000
PG 64-xx	7,500
PG 70-xx	15,000
PG 76-xx (or higher)	20,000

1/ When produced at temperatures of 275 ± 5 °F (135 ± 3 °C) or below, loose warm mix asphalt shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg wheel specimens.

(2) Tensile Strength. Tensile strength testing shall be according to the Illinois Modified AASHTO T 283 procedure. The minimum allowable conditioned tensile strength shall be 60 psi (415 kPa) for non-polymer modified performance graded (PG) asphalt binder and 80 psi (550 kPa) for polymer modified PG asphalt binder, except polymer modified PG XX-28 or lower asphalt binders which shall have a minimum tensile strength of 70 psi (483 kPa). The maximum allowable unconditioned tensile strength shall be 200 psi (1380 kPa).

(3) I-FIT Flexibility Index (FI). The minimum FI shall be as follows.

Illinois Modified AASHTO TP 124		
Mixture	Short Term Aging, Minimum FI	Long Term Aging, Minimum FI [2/]
HMA [1/]	8.0	5.0 [3/]
SMA	16.0	10.0
IL-4.75	12.0	-

1/ All mix designs, except for SMA and IL-4.75 mixtures.

2/ Required for surface courses only.

3/ Production long term aging FI for HMA shall be a minimum of 4.0.

If a mix fails the Department's verification testing, the Contractor shall make necessary changes to the mix and provide passing Hamburg wheel, tensile strength, and I-FIT test results from a private lab. The Department will verify the passing results."

Start of HMA Production and Job Mix Formula (JMF) Adjustments. Revise Article 1030.06(a) of the Standard Specifications to read:

"(a) High ESAL Mixtures. A test strip will be required at the beginning of HMA production for each mixture according to the Manual of Test Procedures for Materials "Hot Mix Asphalt Test Strip Procedures". A test strip will not be required for HMA mixtures or shoulder applications with a quantity less than 3000 tons (2750 metric tons); however, such mixtures shall still be sampled on the first day of production for the Hamburg wheel and I-FIT testing.

Before start-up, target values shall be determined by applying gradation correction factors to the JMF when applicable. These correction factors shall be determined from previous experience. The target values, when approved by the Engineer, shall be used to control HMA production. Plant settings and control charts shall be set according to target values.

Before constructing the test strip, target values shall be determined by applying gradation correction factors to the JMF when applicable. After any JMF adjustment, the JMF shall become the Adjusted Job Mix Formula (AJMF). Upon completion of the first acceptable test strip, the JMF shall become the AJMF regardless of whether or not the JMF has been adjusted. If an adjustment/plant change is made, the Engineer may require a new test strip to be constructed. If the HMA placed during the initial test strip is determined to be unacceptable to remain in place by the Engineer, it shall be removed and replaced.

The limitations between the JMF and AJMF are as follows.

Parameter	Adjustment
1/2 in. (12.5 mm)	± 5.0 %
No. 4 (4.75 mm)	± 4.0 %
No. 8 (2.36 mm)	± 3.0 %
No. 30 (600 µm)	*
No. 200 (75 µm)	*
Asphalt Binder Content	± 0.3 %

* In no case shall the target for the amount passing be greater than the JMF.

Adjustments outside the above limitations will require a new mix design.

Mixture sampled to represent the test strip 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 1030.04(d) above.

Mixture sampled during production for Hamburg wheel and I-FIT will be tested by the Department. The Hamburg wheel and I-FIT results shall meet the requirements specified in Article 1030.04(d) above.

Upon notification by the Engineer of a failing Hamburg wheel or I-FIT test and prior to restarting production, the Contractor shall make necessary adjustments approved by the Engineer to the mixture production and submit another mixture sample for the Department to conduct Hamburg wheel and I-FIT testing. Prior produced material may be paved out provided all other mixture criteria is being met. Upon consecutive failing Hamburg wheel and I-FIT tests, no additional mixture shall be produced until the Engineer receives passing Hamburg wheel and I-FIT test results.

The Department may conduct additional Hamburg wheel and I-FIT testing on production material as determined by the Engineer."

Add the following to the end of Article 1030.06(b) of the Standard Specifications:

"I-FIT testing will be performed for Low ESAL mixtures (excluding Class D patches, pavement patching and incidental HMA) during mixture production. Within one working day 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 I-FIT testing shall be according to the "Low ESAL - Required Samples for Verification Testing" table in Article 1030.04(d) above."

80406

LUMINAIRES, LED (BDE)

Effective: April 1, 2019

Description. This work shall consist of furnishing and installing light emitting diode (LED) luminaires. Work shall be according to Sections 801, 821, and 1067 of the Standard Specifications, except as modified herein.

Submittals. In addition to the requirements listed in Article 801.05(a), submittals for LED luminaires shall include the following.

- Completed manufacturer's luminaire ordering form with the full catalog number provided.

- Descriptive literature and catalog cuts for the luminaire, driver, and surge protective device.

- Lighting calculations generated with AGi32 software demonstrating compliance with the Luminaire Performance Table shown in the contract. These calculations shall be performed to the following criteria: photopic units shall be used; calculations shall be performed to an accuracy of two digits (x.xx cd/m^2); point-by-point illuminance, luminance, and veiling luminance ratios demonstrating that the submitted luminaire meets the lighting metrics specified in the Luminaire Performance Table using IES RP-8 methods.

Upon request by the Engineer, submittals for LED Luminaires shall also include any or all the following.

- IES file associated with each submitted luminaire in IES LM-63 format.

- TM-21 calculator spreadsheet (XLSX or PDF format) and if available, TM-28 report for the specified luminaire or luminaire family. Both reports shall be for 50,000 hours at an ambient temperature of 77 °F (25 °C).

- LM-79 report with National Voluntary Laboratory Accreditation Program (NVLAP) current at the time of testing in PDF format inclusive of the following: isofootcandle diagram with half candela contour and maximum candela point; polar plots through maximum plane and maximum cone; coefficient of utilization graph; candela table; and spectral distribution graph and chromaticity diagram.

- LM-80 report for the specified LED package in PDF format and if available, LM-84 report for the specified luminaire or luminaire family in PDF format. Both reports shall be conducted by a laboratory with NVLAP certification current at the time of testing.

- In Situ Temperature Measurement Test (ISTMT) report for the specified luminaire or luminaire family in PDF format.

- Vibration test report in accordance with ANSI C136.31 in PDF format.

- ASTM B117/ASTM D1654 (neutral salt spray) test and sample evaluation report in PDF format.

- ASTM G154 (ASTM D523) gloss test report in PDF format.

- LED drive current, total luminaire input wattage, and current over the operating voltage range at an ambient temperature of 77 °F (25 °C).

- Power factor (pf) and total harmonic distortion (THD) at maximum and minimum supply and at nominal voltage for the dimmed states of 70%, 50%, and 30% full power.

- Ingress protection (IP) test reports, conducted according to ANSI C136.25 requirements, for the driver and optical assembly in PDF format.

- Installation, maintenance, and cleaning instructions in PDF format, including recommendations on periodic cleaning methods.

- Documentation in PDF format that the reporting laboratory is certified to perform the required tests.

Warranty. Replace the last sentence of Article 801.14(a) with the following.

"The warranty, including the maintained minimum luminance, for LED signal head modules, optically programmed LED signal head modules, and LED pedestrian signal head modules shall cover a minimum of 60 months from the date of delivery. The warranty for LED roadway luminaires, LED highmast luminaires, LED underpass luminaires, LED sign lighting luminaires, LED obstruction warning luminaires, and all of their components shall cover a minimum of ten years from the date of delivery."

Roadway Luminaires. Revise Article 821.02(d) to read.

"(d) Light Source .....1067.06"

Revise the third paragraph of Article 821.03 to read.

"Each luminaire driver and/or driver arrangement shall be checked to assure compatibility with the project power supply. When the luminaire driver has a readily accessible electrical compartment, the driver shall be attached so as to be easily removed for maintenance."

Replace the fifth paragraph of Article 821.03 with the following.

"No luminaire shall be installed before it is approved. When independent luminaire testing is required, full approval will not be given until complete test results which demonstrate compliance with the contract documents have been reviewed and accepted by the Engineer. Independent luminaire testing will be required, and shall be conducted, according to Article 1067.01(k)".

Revise the last paragraph of Article 821.03 to read.

"When installing or adjusting the luminaire, care shall be taken to avoid touching the lenses or allowing contaminants to be deposited on any part of the optical assembly. Each lens shall be free of all dirt, smudges, etc. Should the luminaire require cleaning, the luminaire manufacturer's cleaning instructions shall be strictly followed."

Revise Article 821.08 to read.

"**821.08 Basis of Payment.** This work will be paid for at the contract unit price per each for LUMINAIRE, LED, ROADWAY, of the output designation specified; LUMINAIRE, LED, HIGHMAST, of the output designation specified; LUMINAIRE, LED, UNDERPASS, WALLMOUNT, of the output designation specified; LUMINAIRE, LED, UNDERPASS, SUSPENDED, of the output designation specified; LUMINAIRE, LED, SIGN LIGHTING, of the output designation specified.

When independent luminaire testing is required, the work will be paid for at the contract lump sum price for INDEPENDENT LUMINAIRE TESTING."

Luminaires. Revise Articles 1067.01 through 1067.06 to read.

"**1067.01 General.** The luminaire shall be mechanically strong and easy to maintain. The size, weight, and shape of the luminaire shall be designed so as not to incite detrimental vibrations in its respective pole and it shall be compatible with the pole and arm. All electrical and electronic components of the luminaire shall comply with the requirements of Restriction of Hazardous Materials (RoHS) regulations. The luminaire shall be listed for wet locations by an NRTL and shall meet the requirements of UL 1598 and UL 8750.

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

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

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

(c) Optical Assembly. The optical assembly shall have an IP66 or higher rating in accordance with ANSI C136.25. The circuiting of the LED array shall be designed to minimize the effect of individual LED failures on the operation of other LEDs. All optical components shall be made of glass or a UV stabilized, non-yellowing material.

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

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

The driver shall incorporate the use of thermal foldback circuitry to reduce output current under abnormal driver case temperature conditions and shall be rated for a lifetime of 100,000 hours at an ambient temperature exposure of 77 °F (25 °C) to the luminaire. If the driver has a thermal shut down feature, it shall not turn off the LEDs when operated at 104 °F (40 °C) or less.

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

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

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

(f) Photometric Performance. The luminaire shall be IES LM-79 tested by a laboratory holding accreditation from the NVLAP for IES LM-79 testing procedures. At a minimum the LM-79 report shall include a backlight/uplight/glare (BUG) rating and a luminaire classification system (LCS) graph showing lumen values and percent lumens by zone as described in IES RP-8. The uplight of the BUG rating shall be U=0.

The luminaire shall also meet the requirements of the Luminaire Performance Table shown in the contract.

(g) Finish. The luminaire shall have a baked acrylic enamel finish. The color of the finish shall be gray, bronze, or black to match the pole or tower on which the luminaire is mounted.

The finish shall have a rating of six or greater according to ASTM D1654, Section 8.0 Procedure A – Evaluation of Rust Creepage for Scribed Samples after exposure to

1000 hours of testing according to ASTM B117 for painted or finished surfaces under environmental exposure.

The luminaire finish shall have less than or equal to 30% reduction of gloss according to ASTM D523 after exposure of 500 hours to ASTM G154 Cycle 6 QUV® accelerated weathering testing.

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

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

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

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

(j) Wiring. All wiring in the luminaire shall be rated for operation at 600V, 221 °F (105 °C).

(k) Independent Luminaire Testing. When a contract has 30 or more luminaires of the same manufacturer's catalog number, that luminaire shall be independently tested to verify it will meet the contract requirements. The quantity of luminaires requiring testing shall be one luminaire for the first 30 plus one additional luminaire for each additional 50 luminaires of that catalog number. Testing is not required for temporary lighting luminaires.

Prior to testing the Contractor shall propose a properly accredited laboratory and a qualified independent witness, submitting their qualifications to the Engineer for approval. After approval, the Contractor shall coordinate the testing and pay all associated costs, including travel expenses, for the independent witness.

(1) Independent Witness. The independent witness shall select from the project luminaires at the manufacturer's facility the luminaires for testing. In all cases, the selection of luminaires shall be a random selection from the entire completed lot of luminaires required for the contract. Selections from partial lots will not be allowed. The independent witness shall mark each sample luminaire's shipping carton with the IDOT contract number and a unique sample identifier.

At the time of random selection, the independent witness shall inspect the luminaire(s) for compliance with all physical, mechanical, and labeling requirements for luminaires

according to Sections 821 and 1067. If deficiencies are found during the physical inspection, the Contractor shall have all luminaires of that manufacturer's catalog number inspected for the identified deficiencies and shall correct the problem(s) where found. Random luminaire selection and physical inspection must then be repeated. When the physical inspection is successfully completed, the independent witness shall mark the project number and sample identifier on the interior housing and driver of the luminaires and have them shipped to the laboratory.

The independent witness shall be present when testing is approved to be performed by the luminaire manufacturer. If the tests are performed by a laboratory independent of the luminaire manufacturer, distributor, and Contractor, the independent witness need not be present during the testing.

(2) Laboratory Testing. Luminaires shall be tested at an NVLAP accredited laboratory approved for each of the required tests. The testing shall include photometric, colorimetric, and electrical testing according to IES LM-79. Colorimetric values shall be determined from total spectral radiant flux measurements using a spectroradiometer. Photometric testing shall be according to IES recommendations and as a minimum, shall yield an isofootcandle chart, with max candela point and half candela trace indicated, an isocandela diagram, maximum plane and maximum cone plots of candela, a candlepower table (house and street side), a coefficient of utilization chart, a luminous flux distribution table, BUG rating report, and complete calculations based on specified requirements and test results.

All testing shall cover the full spherical light output at a maximum of 5 degree intervals at the vertical angles. The vertical angles shall run from 0 to 180 degrees. There shall be a minimum of 40 lateral test planes listed in Fig. 1 of IES LM-31 plus the two planes containing the maximum candela on the left and right sides of the luminaire axis. Before testing, the luminaire when mounted on the goniometer shall be scanned for vertical and horizontal angles of maximum candela and these planes included in the test. The luminaire shall be checked for a bi-symmetric light distribution. Individual tests must be conducted for each hemisphere, quadrant, and left/right sides.

The results for each photometric and colorimetric test performed shall be presented in a standard IES LM-79 report that includes the contract number, sample identifier, and the outputs listed above. The calculated results for each sample luminaire shall meet or exceed the contract specified levels in the luminaire performance table(s). The laboratory shall mark its test identification number on the interior of each sample luminaire.

Electrical testing shall be in according to IES LM-79 as well as NEMA and ANSI standards. The report shall list luminaire characteristics including input amperes, watts, power factor, total harmonic distortion, and LED driver current for full and partial power.

(3) Summary Test Report. The summary test report shall consist of a narrative documenting the test process, highlight any deficiencies and corrective actions, and clearly state which luminaires have met or exceeded the test requirements and may be released for delivery to the jobsite. Photographs shall also be used as applicable to document luminaire deficiencies and shall be included in the test report. The summary test report shall include the Luminaire Physical Inspection Checklist (form BDE 5650), photometric and electrical test reports, and point-by-point photometric calculations performed in AGi32 sorted by luminaire manufacturers catalog number. All test reports shall be certified by the independent test laboratory's authorized representative or the independent witness, as applicable, by a dated signature on the first page of each report. The summary test reports shall be delivered to the Engineer and the Contractor as an electronic submittal. Hard copy reports shall be delivered to the Engineer for record retention.

(4) Approval of Independent Testing Results. Should any of the tested luminaires fail to satisfy the specifications and perform according to approved submittal information, all luminaires of that manufacturers catalog number shall be deemed unacceptable and shall be replaced by alternate equipment meeting the specifications. The submittal and testing process shall then be repeated in its entirety. The Contractor may request in writing that unacceptable luminaires be corrected in lieu of replacement. The request shall identify the corrections to be made and upon approval of the request, the Contractor shall apply the corrections to the entire lot of unacceptable luminaires. Once the corrections are completed, the testing process shall be repeated, including selection of a new set of sample luminaires. The number of luminaires to be tested shall be the same quantity as originally tested.

The process of retesting, correcting, or replacing luminaires shall be repeated until luminaires for each manufacturers catalog number are approved for the project. Corrections and re-testing shall not be grounds for additional compensation or extension of time. No luminaires shall be shipped from the manufacturer to the jobsite until all luminaire testing is completed and approved in writing.

Submittal information shall include a statement of intent to provide the testing as well as a request for approval of the chosen independent witness and laboratory. All summary test reports, written reports, and the qualifications of the independent witness and laboratory shall be submitted for approval to the Engineer with a copy to the Bureau of Design and Environment, 2300 S Dirksen Parkway, Room 330 Springfield, IL 62764.

1067.02 Roadway Luminaires. Roadway luminaires shall be according to Article 1067.01 and the following.

The luminaire shall be horizontally mounted and shall be designed to slip-fit on a 2-3/8 in. (60 mm) outside diameter pipe arm with a stop to limit the amount of insertion to 7 in. (180 mm). It shall not be necessary to remove or open more than the access door to mount the luminaire.

The effective projected area (EPA) of the luminaire shall not exceed 1.6 sq ft (0.149 sq m) and the weight, including accessories, shall not exceed 40 lb (18.14 kg). If the weight of the luminaire is less than 20 lb (9.07 kg), weight shall be added to the mounting arm or a supplemental vibration damper installed as approved by the Engineer.

The luminaire shall be equipped with both internal and external leveling indicators. The external leveling indicator shall be clearly visible in daylight to an observer directly under the luminaire at a mounting height of 50 ft (15.2 m).

The luminaire shall be fully prewired to accept a seven-pin, twist-lock receptacle that is compliant with ANSI C136.41. All receptacle pins shall be connected according to TALQ Consortium protocol.

The luminaire shall be provided with an installed shorting cap that is compliant with ANSI C136.10.

1067.03 Highmast Luminaires. Highmast luminaires shall be according to Article 1067.01 and the following.

The luminaire shall be horizontally mounted and shall be designed and manufactured for highmast tower use. The EPA of the luminaire shall not exceed 3.0 sq ft (0.279 sq m) and the weight, including accessories, shall not exceed 85 lb (38.6 kg).

The optical assembly shall be capable of being rotated 360 degrees. A vernier scale shall be furnished on the axis of rotation for aiming the luminaire in relation to its mounting tenon arm. The scale shall be graduated in 5 degree increments or less. The luminaire shall be clearly marked at the vernier as to 'house-side' and 'street-side' to allow proper luminaire orientation.

1067.04 Underpass Luminaires. Underpass luminaries shall be according to Article 1067.01 and the following.

The underpass luminaire shall be complete with all supports, hardware, and appurtenant mounting accessories. The underpass luminaire shall be suitable for lighting a roadway underpass at an approximate mounting height of 15 ft (4.5 m) from a position suspended directly above the roadway edge of pavement or attached to a wall or pier. The underpass luminaire shall meet the requirements of ANSI C136.27.

It shall not be necessary to remove more than the cover, reflector and lens to mount the luminaire. The unit shall be heavy duty, suitable for highway use and shall have no indentations or crevices in which dirt, salt, or other corrosives may collect.

(a) Housing. The housing and lens frame shall be made of heavy duty die cast aluminum or 16 gauge (1.5 mm) minimum thickness Type 304 stainless steel. All seams in the housing enclosure shall be welded by continuous welds.

The housing shall have an opening for installation of a 3/4 in. (19 mm) diameter conduit.

(b) Lens and Lens Frame. The frame shall not overlap the housing when closed. The luminaire shall have a flat glass lens to protect the LEDs from dirt accumulation or be designed to prevent dirt accumulation. The optic assembly shall be rated IP 66 or higher.

1067.05 Sign Lighting Luminaires. Sign lighting luminaries shall be suitable for lighting overhead freeway and expressway guide signs; and shall be according to Article 1067.01.

1067.06 Light Sources. The light sources in all luminaires shall be LED according to Article 1067.01 and the following.

(a) The light source shall be according to ANSI C136.37 for solid state light sources used in roadway and area lighting.

(b) The light source shall have a minimum color rendering index (CRI) of 70 and a nominal correlated color temperature (CCT) of 4000 K.

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

Output Designations and Initial Luminous Flux			*(for information only)*
Output Designation	**Initial Luminous Flux (lm)**		Approximate High Pressure Sodium (HPS) Equivalent Wattage
A	2,200		35 (Low Output)
B	3,150		50 (Low Output)
C	4,400		70 (Low Output)
D	6,300		100 (Low Output)
E	9,450		150 (Low Output)
F	12,500		200 (Med Output)
G	15,500		250 (Med Output)
H	25,200		400 (Med Output)
I	47,250		750 (High Output)
J	63,300		1,000 (High Output)
K	80,000+		1,000+ (High Output)

Luminaires with an initial luminous flux less than the values listed in the above table may be acceptable if they meet the requirements given in the Luminaire Performance Table shown in the contract."

80411

MANHOLES, VALVE VAULTS, AND FLAT SLAB TOPS (BDE)

Effective: January 1, 2018
Revised: March 1, 2019

Description. In addition to those manufactured according to the current standards included in this contract, manholes, valve vaults, and flat slab tops manufactured prior to March 1, 2019, according to the previous Highway Standards listed below will be accepted on this contract:

Product	Previous Standards		
Precast Manhole Type A, 4' (1.22 m) Diameter	602401-05	602401-04	602401-03
Precast Manhole Type A, 5' (1.52 m) Diameter	602402-01	602402	602401-03
Precast Manhole Type A, 6' (1.83 m) Diameter	602406-09	602406-08	602406-07
Precast Manhole Type A, 7' (2.13 m) Diameter	602411-07	602411-06	602411-05
Precast Manhole Type A, 8' (2.44 m) Diameter	602416-07	602416-06	602416-05
Precast Manhole Type A, 9' (2.74 m) Diameter	602421-07	602421-06	602421-05
Precast Manhole Type A, 10' (3.05 m) Diameter	602426-01	602426	
Precast Valve Vault Type A, 4' (1.22 m) Diameter	602501-04	602501-03	602501-02
Precast Valve Vault Type A, 5' (1.52 m) Diameter	602506-01	602506	602501-02
Precast Reinforced Concrete Flat Slab Top	602601-05	602601-04	

The following revisions to the Standard Specifications shall apply to manholes, valve vaults, and flat slab tops manufactured according to the current standards included in this contract:

Revise Article 602.02(g) of the Standard Specifications to read:

"(g) Structural Steel (Note 4) 1006.04

Note 4. All components of the manhole joint splice shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable."

Add the following to Article 602.02 of the Standard Specifications:

"(s) Anchor Bolts and Rods (Note 5) 1006.09

Note 5. The threaded rods for the manhole joint splice shall be according to the requirements of ASTM F 1554, Grade 55, (Grade 380)."

Revise the second paragraph of Article 1042.10 of the Standard Specifications to read:

"Catch basin Types A, B, C, and D; Manhole Type A; Inlet Types A and B; Drainage Structures Types 1, 2, 3, 4, 5, and 6; Valve Vault Type A; and reinforced concrete flat slab top (Highway Standard 602601) shall be manufactured according to AASHTO M 199 (M 199M), except as shown on the plans. Additionally, catch basins, inlets, and drainage structures shall have a minimum concrete compressive strength of 4500 psi (31,000 kPa) at 28 days and manholes,

valve vaults, and reinforced concrete flat slab tops shall have a minimum concrete compressive strength of 5000 psi (34,500 kPa) at 28 days.”

80393

MECHANICALLY STABILIZED EARTH RETAINING WALLS (BDE)

Effective: November 1, 2019
Revised: November 1, 2020

Revise Articles 1003.07(f)(2) and 1004.06(f)(2) of the Standard Specifications to read:

"(2) The chlorides shall be a maximum of 100 parts per million according to Illinois Modified AASHTO T 291."

Revise Articles 1003.07(f)(3) and 1004.06(f)(3) of the Standard Specifications to read:

"(3) The sulfates shall be a maximum of 200 parts per million according to Illinois Modified AASHTO T 290."

Revise Articles 1003.07(g) and 1004.06(g) of the Standard Specifications to read:

"(g) Testing Protocol. Prior to the start of and during construction, the internal friction angle and pH shall be determined in order to demonstrate the select fill material meets the specification requirements. Resistivity, chlorides, sulfates, and organic content test results shall also be determined if steel reinforcement is used. Testing shall be according to the current Bureau of Materials Policy Memorandum "Fine and Coarse Aggregates Used as Select Fill in MSE Walls Acceptance Procedures for Approved/Qualified Aggregate Sources"."

80418

MOBILIZATION (BDE)

Effective: April 1, 2020

Replace Articles 671.02(a), (b), and (c) of the Standard Specifications with the following:

"(a) Upon execution of the contract, 90 percent of the pay item will be paid.

(b) When 90 percent of the adjusted contract value is earned, the remaining ten percent of the pay item will be paid along with any amount bid in excess of six percent of the original contract amount."

80428

PORTLAND CEMENT CONCRETE – HAUL TIME (BDE)

Effective: July 1, 2020

Revise Article 1020.11(a)(7) of the Standard Specifications to read:

"(7) Haul Time. Haul time shall begin when the delivery ticket is stamped. The delivery ticket shall be stamped no later than five minutes after the addition of the mixing water to the cement, or after the addition of the cement to the aggregate when the combined aggregates contain free moisture in excess of two percent by weight (mass). If more than one batch is required for charging a truck using a stationary mixer, the time of haul shall start with mixing of the first batch. Haul time shall end when the truck is emptied for incorporation of the concrete into the work. The maximum haul time shall be as follows.

Concrete Temperature at Point of Discharge, °F (°C)	Maximum Haul Time 1/ (minutes)	
	Truck Mixer or Truck Agitator	Nonagitator Truck
50 - 64 (10 - 17.5)	90	45
> 64 (> 17.5) - without retarder	60	30
> 64 (> 17.5) - with retarder	90	45

1/ To encourage start-up testing for mix adjustments at the plant, the first two trucks will be allowed an additional 15 minutes haul time whenever such testing is performed.

For a mixture which is not mixed on the jobsite, a delivery ticket shall be required for each load. The following information shall be recorded on each delivery ticket: (1) ticket number; (2) name of producer and plant location; (3) contract number; (4) name of Contractor; (5) stamped date and time batched; (6) truck number; (7) quantity batched; (8) amount of admixture(s) in the batch; (9) amount of water in the batch; and (10) Department mix design number.

For concrete mixed in jobsite stationary mixers, the above delivery ticket may be waived, but a method of verifying the haul time shall be established to the satisfaction of the Engineer."

80430

PORTLAND CEMENT CONCRETE BRIDGE DECK CURING (BDE)

Effective: April 1, 2015
Revised: November 1, 2019

Revise the following three entries and add the following footnote to the Index Table of Curing and Protection of Concrete Construction in Article 1020.13 of the Standard Specifications:

"INDEX TABLE OF CURING AND PROTECTION OF CONCRETE CONSTRUCTION			
TYPE OF CONSTRUCTION	CURING METHODS	CURING PERIOD DAYS	LOW AIR TEMPERATURE PROTECTION METHODS
Superstructure (except deck)	1020.13(a)(1)(2)(3)(5)(6) [8/ 19/]	7	1020.13(d)(1)(2)
Superstructure (Approach Slab)	1020.13(a)(5)(6) [19/]	3	1020.13(d)(1)(2) [17/]
Deck	1020.13(a)(5)(6) [19/]	7	1020.13(d)(1)(2) [17/]

19/ The cellulose polyethylene or synthetic fiber with polymer polyethylene blanket method shall not be used on latex modified concrete, or vertical concrete surfaces greater than 1 ft (300 mm), e.g. parapets."

Add the following to Article 1020.13(a) of the Standard Specifications.

"(6) Cellulose Polyethylene Blanket Method and Synthetic Fiber with Polymer Polyethylene Blanket Method. After the surface of concrete has been textured or finished, it shall be covered immediately with a wetted cellulose polyethylene blanket or wetted synthetic fiber with polymer polyethylene blanket. The blankets shall be installed with the white perforated polyethylene side facing up. The blanket's fiber side shall be wetted immediately prior to placement or as the blanket is being placed, and the polyethylene side shall be thoroughly soaked with a gentle spray of water immediately after placement. For bridge decks, a foot bridge shall be used to place and wet the blankets.

Adjoining blankets shall overlap a minimum of 8 in. (200 mm). Bubbles and wrinkles shall be removed with a broom, squeegee, or as recommended by the manufacturer.

The blankets shall be maintained in a wetted condition until the concrete has hardened sufficiently to place soaker hoses without indentations to the concrete surface. The soaker hoses shall be placed on top of the blankets at a maximum 4 ft (1.2 m) spacing. The blankets shall be kept wet with a continuous supply of water for the remainder of the curing period. Other continuous wetting systems may be used if approved by the Engineer.

For areas inaccessible to the blankets, curing shall be according to Article 1020.13(a)(3). "

Revise the first paragraph of Article 1022.03 of the Standard Specifications to read:

"**1022.03 Waterproof Paper Blankets, White Polyethylene Sheeting, Burlap-Polyethylene Blankets, Cellulose Polyethylene Blankets, and Synthetic Fiber with Polymer Polyethylene Blankets.** These materials shall be white and according to ASTM C 171.

The cellulose polyethylene blanket shall consist of a perforated white polyethylene sheeting with cellulose fiber backing and shall be limited to single use only. The cellulose polyethylene blankets shall be delivered to the jobsite unused and in the manufacturer's unopened packaging until ready for installation. Each roll shall be clearly labeled on the product with product name, manufacturer, and manufacturer's certification of compliance with ASTMC 171.

The synthetic fiber with polymer polyethylene blanket shall consist of a perforated white polyethylene sheeting with absorbent synthetic fibers and super absorbent polymer backing, and shall be limited to single use only. The synthetic fiber with polymer polyethylene blankets shall be delivered to the jobsite unused and in the manufacturer's unopened packaging until ready for installation. Each roll shall be clearly labeled on the product with product name, manufacturer, and manufacturer's certification of compliance with ASTM C 171."

80359

PORTLAND CEMENT CONCRETE PAVEMENT PATCHING (BDE)

Effective: July 1, 2020

Revise Article 701.17(e)(3)b. of the Standard Specifications to read:

"b. Strength Tests. For patches constructed with Class PP-1, PP-2, PP-3, PP-4, or PP-5 concrete, the pavement may be opened to traffic when test specimens have obtained a minimum flexural strength of 250 psi (1725 kPa) or a minimum compressive strength of 1600 psi (11,000 kPa) according to Article 1020.09. However, the concrete mixture shall obtain a minimum flexural strength of 600 psi (4150 kPa) or a minimum compressive strength of 3200 psi (22,100 kPa) in the time specified in Table 1 of Article 1020.04.

With the approval of the Engineer, concrete strength may be determined according to Illinois Modified AASHTO T 325."

Revise Article 1001.01(d) of the Standard Specifications to read:

"(d) Rapid Hardening Cement. Rapid hardening cement shall be used according to Article 1020.04 or when approved by the Engineer. The cement shall be on the Department's qualified product list, and shall be according to ASTM C 1600 in addition to the following.

(1) The cement shall have a minimum final set of 10 minutes, according to Illinois Modified AASHTO T 131.

(2) The cement shall have a minimum compressive strength of 2000 psi (13,800 kPa) at 3.0 hours, 3200 psi (22,100 kPa) at 6.0 hours, and 4000 psi (27,600 kPa) at 24.0 hours, according to Illinois Modified AASHTO T 106.

(3) The cement shall have a maximum drying shrinkage of 0.07 percent at 28 days, according to Illinois Modified ASTM C 596.

(4) The cement shall have a maximum expansion of 0.04 percent at 14 days, according to Illinois Modified ASTM C 1038."

Revise the first paragraph of Article 1020.05(b)(5) of the Standard Specifications to read:

"(5) For Class PP-4 concrete, a high range water-reducing admixture shall be used in addition to the air-entraining admixture. The Contractor has the option to use a water-reducing admixture with the high range water-reducing admixture. An accelerator shall not be used. A mobile portland cement concrete plant shall be used to produce the patching mixture."

80431

PORTLAND CEMENT CONCRETE PAVEMENT PLACEMENT (BDE)

Effective: July 1, 2020

Revise the fifth paragraph of Article 420.07 of the Standard Specifications to read:

"The concrete shall be deposited uniformly across the subgrade or subbase as close as possible to its final position. The time elapsing from when the concrete is unloaded until it is incorporated into the work shall not exceed 20 minutes. When required, hand spreading shall be accomplished with shovels."

80432

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (BDE)

Effective: November 1, 2012
Revised: January 1, 2021

Revise Section 1031 of the Standard Specifications to read:

"**SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES**

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

(a) Reclaimed Asphalt Pavement (RAP). RAP is the material produced by cold milling or crushing an existing hot-mix asphalt (HMA) pavement. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.

(b) Reclaimed Asphalt Shingles (RAS). RAS is the material produced from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material by weight of RAS, as defined in the Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources". RAS shall come from a facility source on the Department's "Qualified Producer List of Certified Sources for Reclaimed Asphalt Shingles" where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 93 percent passing the #4 (4.75 mm) sieve based on a dry shake gradation. RAS shall be uniform in gradation and asphalt binder content and shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.

(1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.

(2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

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

(a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP shall be added to the pile after the pile has been sealed. Stockpiles shall be sufficiently separated to prevent intermingling at the base. Stockpiles shall be identified by signs indicating the type as listed below (i.e. "Homogeneous Surface").

Prior to milling, the Contractor shall request the District provide documentation on the quality of the RAP to clarify the appropriate stockpile.

(1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. FRAP shall be fractionated prior to testing by screening into a minimum of two size fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP shall pass the sieve size specified below for the mix into which the FRAP will be incorporated.

Mixture FRAP will be used in:	Sieve Size that 100 % of FRAP Shall Pass
IL-19.0	1 1/2 in. (37.5 mm)
SMA 12.5	1 in. (25.0 mm)
IL-9.5, IL-9.5FG, SMA 9.5	3/4 in. (19.0 mm)
IL-4.75	1/2 in. (12.5 mm)

(2) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures and represent: 1) the same aggregate quality, but shall be at least C quality; 2) the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag); 3) similar gradation; and 4) similar asphalt binder content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogeneous" with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.

(3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. Conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 5/8 in. (16 mm) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag.

(4) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

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

(b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall not be intermingled. Each stockpile shall be signed indicating what type of RAS is present.

Unless otherwise specified by the Engineer, mechanically blending manufactured sand (FM 20 or FM 22) up to an equal weight of RAS with the processed RAS will be permitted

to improve workability. The sand shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The sand shall be accounted for in the mix design and during HMA production.

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

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

(a) RAP/FRAP Testing. When used in HMA, the RAP/FRAP shall be sampled and tested either during or after stockpiling.

(1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

(2) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

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

(b) RAS Testing. RAS or RAS blended with manufactured sand shall be sampled and tested during stockpiling according to the Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Source".

Samples shall be collected during stockpiling at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 250 tons (225 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a ≤ 1000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS or RAS blended with manufactured sand shall be stockpiled in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.

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

If the sampling and testing was performed at the shingle processing facility in accordance with the QC Plan, the Contractor shall obtain and make available all of the test results from start of the initial stockpile.

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

(a) Evaluation of RAP/FRAP Test Results. All of the extraction results shall be compiled and averaged for asphalt binder content and gradation, and when applicable G_{mm}. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	FRAP/Homogeneous/ Conglomerate
1 in. (25 mm)	
1/2 in. (12.5 mm)	± 8 %
No. 4 (4.75 mm)	± 6 %
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	
No. 30 (600 µm)	± 5 %
No. 200 (75 µm)	± 2.0 %
Asphalt Binder	± 0.4 % 1/
G_{mm}	± 0.03

1/ The tolerance for FRAP shall be ± 0.3 percent.

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, the RAP/FRAP shall not be used in HMA unless the RAP/FRAP representing the failing tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the ITP, “Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)”.

(b) Evaluation of RAS and RAS Blended with Manufactured Sand Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. Individual test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.0 %
Asphalt Binder Content	± 1.5 %

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, or if the percent unacceptable material exceeds 0.5 percent by weight of material retained on the # 4 (4.75 mm) sieve, the RAS or RAS blend shall not be used in Department projects. All test data and acceptance ranges shall be sent to the District for evaluation.

1031.05 Quality Designation of Aggregate in RAP/FRAP.

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

(1) RAP from Class I, Superpave/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.

(2) RAP from Class I binder, Superpave/HMA (High ESAL) binder, or (Low ESAL) IL-19.0L binder mixtures are designated as containing Class C quality coarse aggregate.

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

If the quality is not known, the quality shall be determined as follows. Coarse and fine FRAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5000 tons (4500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the specified testing. The consultant laboratory shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the Central Bureau of Materials Aggregate Lab for MicroDeval Testing, according to ITP 327. A maximum loss of 15.0 percent will be applied for all HMA applications.

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

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

(1) Coarse Aggregate Size. The coarse aggregate in all RAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.

(2) Steel Slag Stockpiles. Homogeneous RAP stockpiles containing steel slag will be approved for use in all HMA (High ESAL and Low ESAL) Surface and Binder Mixture applications.

(3) Use in HMA Surface Mixtures (High and Low ESAL). RAP/FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be FRAP or homogeneous in which the coarse aggregate is Class B quality or better. FRAP from Conglomerate stockpiles shall be considered equivalent to limestone for frictional considerations. Known frictional contributions from plus #4 (4.75 mm) homogeneous FRAP stockpiles will be accounted for in meeting frictional requirements in the specified mixture.

(4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP/FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP, homogeneous, or conglomerate, in which the coarse aggregate is Class C quality or better.

(5) Use in Shoulders and Subbase. RAP/FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, homogeneous, or conglomerate.

(6) When the Contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in Article 1031.06(c)(1) below for a given Ndesign.

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

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

(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement (ABR) shall not exceed the amounts listed in the following table.

HMA Mixtures - RAP/RAS Maximum ABR % [1/ 2/]			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface
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). If warm mix asphalt (WMA) technology is utilized and production temperatures do not exceed 275 °F (135 °C), the high and low virgin asphalt binder grades shall each be reduced by one grade when RAP/RAS ABR exceeds 25 percent (i.e. 26 percent RAP/RAS ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

(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
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). If warm mix asphalt (WMA) technology is utilized and production temperatures do not exceed 275 °F (135 °C), the high and low virgin asphalt binder grades shall each be reduced by one grade when FRAP/RAS ABR exceeds 25 percent (i.e. 26 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

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

(a) RAP/FRAP and/or RAS. RAP/FRAP and/or RAS mix designs shall be submitted for verification. If additional RAP/FRAP and/or RAS stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP/FRAP and/or RAS stockpile and HMA mix design, and meets all of the requirements herein, the additional RAP/FRAP and/or RAS stockpiles may be used in the original mix design at the percent previously verified.

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

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

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

(a) RAP/FRAP. The coarse aggregate in all RAP/FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

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

If the RAP/FRAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP/FRAP and either switch to the virgin aggregate design or submit a new RAP/FRAP design.

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

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

(1) Dryer Drum Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

d. Accumulated dry weight of RAP/FRAP/RAS in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.

f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.

g. Residual asphalt binder in the RAP/FRAP/RAS material as a percent of the total mix to the nearest 0.1 percent.

h. Aggregate and RAP/FRAP/RAS moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAP/FRAP/RAS are recorded in a wet condition.)

(2) Batch Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).

d. Mineral filler weight to the nearest pound (kilogram).

e. RAP/FRAP/RAS weight to the nearest pound (kilogram).

f. Virgin asphalt binder weight to the nearest pound (kilogram).

g. Residual asphalt binder in the RAP/FRAP/RAS material as a percent of the total mix to the nearest 0.1 percent.

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

1031.09 RAP in Aggregate Surface Course and Aggregate Wedge Shoulders, Type B. The use of RAP in aggregate surface course (temporary access entrances only) and aggregate wedge shoulders, Type B shall be as follows.

(a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except “Non-Quality” and “FRAP”. The testing requirements of Article 1031.03 shall not apply. RAP used shall be according to the Bureau of Materials Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”.

(b) Gradation. One hundred percent of the RAP material shall pass the 1 1/2 in. (37.5 mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded or single sized will not be accepted.”

80306

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2019
Revised: January 1, 2020

Revise Section 669 of the Standard Specifications to read:

"**SECTION 669. REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES**

669.01 Description. This work shall consist of the transportation and proper disposal of regulated substances. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their contents and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities.

669.02 Equipment. The Contractor shall notify the Engineer of the delivery of all excavation, storage, and transportation equipment to a work area location. The equipment shall comply with OSHA and American Petroleum Institute (API) guidelines and shall be furnished in a clean condition. Clean condition means the equipment does not contain any residual material classified as a non-special waste, non-hazardous special waste, or hazardous waste. Residual materials include, but are not limited to, petroleum products, chemical products, sludges, or any other material present in or on equipment.

Before beginning any associated soil or groundwater management activity, the Contractor shall provide the Engineer with the opportunity to visually inspect and approve the equipment. If the equipment contains any contaminated residual material, decontamination shall be performed on the equipment as appropriate to the regulated substance and degree of contamination present according to OSHA and API guidelines. All cleaning fluids used shall be treated as the contaminant unless laboratory testing proves otherwise.

669.03 Pre-Construction Submittals and Qualifications. Prior to beginning this work, or working in areas with regulated substances, the Contractor shall submit a "Regulated Substances Pre-Construction Plan (RSPCP)" to the Engineer for review and approval using form BDE 2730. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

As part of the RSPCP, the Contractor(s) or firm(s) performing the work shall meet the following qualifications.

(a) Regulated Substances Monitoring. Qualification for environmental observation and field screening of regulated substances work and environmental observation of UST removal shall require either pre-qualification in Hazardous Waste by the Department or demonstration of acceptable project experience in remediation and operations for contaminated sites in accordance with applicable Federal, State, or local regulatory requirements using BDE 2730.

Qualification for each individual performing regulated substances monitoring shall require a minimum of one-year of experience in similar activities as those required for the project.

(b) Underground Storage Tank Removal. Qualification for underground storage tank (UST) removal work shall require licensing and certification with the Office of the State Fire Marshall (OSFM) and possession of all permits required to perform the work. A copy of the permit shall be provided to the Engineer prior to tank removal.

The qualified Contractor(s) or firm(s) shall also document it does not have any current or former ties with any of the properties contained within, adjoining, or potentially affecting the work.

The Engineer will require up to 21 calendar days for review of the RSPCP. The review may involve rejection or revision and resubmittal; in which case, an additional 21 days will be required for each subsequent review. Work shall not commence until the RSPCP has been approved by the Engineer. After approval, the RSPCP shall be revised as necessary to reflect changed conditions in the field and documented using BDE 2730A "Regulated Substances Pre-Construction Plan (RSPCP) Addendum" and submitted to the Engineer for approval.

CONSTRUCTION REQUIREMENTS

669.04 Regulated Substances Monitoring. Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities at the contract specific work areas. As part of the regulated substances monitoring, the monitoring personnel shall perform and document the applicable duties listed on form BDE 2732 "Regulated Substances Monitoring Daily Record (RSMDR)".

(a) Environmental Observation. Prior to beginning excavation, the Contractor shall mark the limits of the contract specific work areas. Once work begins, the monitoring personnel shall be present on-site continuously during the excavation and loading of material.

(b) Field Screening. Field screening shall be performed during the excavation and loading of material from the contract specific work areas, except for material classified according to Article 669.05(b)(1) or 669.05(c) where field screening is not required.

Field screening shall be performed with either a photoionization detector (PID) (minimum 10.6eV lamp) or a flame ionization detector (FID), and other equipment as appropriate, to monitor for potential contaminants associated with regulated substances. The PID or FID shall be calibrated on-site, and background level readings taken and recorded daily, and as field and weather conditions change. Field screen readings on the PID or FID in excess of background levels indicates the potential presence of regulated substances requiring handling as a non-special waste, special waste, or hazardous waste. PID or FID readings may be used as the basis of increasing the limits of removal with the approval of the Engineer but shall in no case be used to decrease the limits.

669.05 Regulated Substances Management and Disposal. The management and disposal of soil and/or groundwater containing regulated substances shall be according to the following:

(a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in soil established pursuant to Subpart F of 35 Ill. Adm. Code 1100.605, the soil shall be managed as follows:

(1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC, but still considered within area background levels by the Engineer, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable. If the soils cannot be utilized within the right-of-way, they shall be managed and disposed of at a landfill as a non-special waste.

(2) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County identified in 35 Ill. Admin. Code 742 Appendix A. Table G, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of at a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation (USFO) within an MSA County provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(3) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, or the MAC within the Chicago corporate limits, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site at a CCDD facility or an USFO within an MSA County excluding Chicago or within the Chicago corporate limits provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(4) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site at a CCDD facility or an USFO within an MSA County excluding Chicago provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(5) When the Engineer determines soil cannot be managed according to Articles 669.05(a)(1) through (a)(4) above and the materials do not contain special waste or hazardous waste, as determined by the Engineer, the soil shall be managed and disposed of at a landfill as a non-special waste.

(6) When analytical results indicate soil is hazardous by characteristic or listing pursuant to 35 Ill. Admin. Code 721, contains radiological constituents, or the Engineer otherwise determines the soil cannot be managed according to Articles 669.05(a)(1)

through (a)(5) above, the soil shall be managed and disposed of off-site as a special waste or hazardous waste as applicable.

(b) Soil Analytical Results Do Not Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels do not exceed the most stringent MAC, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO for any of the following reasons.

(1) The pH of the soil is less than 6.25 or greater than 9.0.

(2) The soil exhibited PID or FID readings in excess of background levels.

(c) Soil Analytical Results Exceed Most Stringent MAC but Do Not Exceed Tiered Approach to Corrective Action Objectives (TACO) Residential. When the soil analytical results indicate that detected levels exceed the most stringent MAC but do not exceed TACO Tier 1 Soil Remediation Objectives for Residential Properties pursuant to 35 Ill. Admin. Code 742 Appendix B Table A, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO.

(d) Groundwater. When groundwater analytical results indicate the detected levels are above Appendix B, Table E of 35 Ill. Admin. Code 742, the most stringent Tier 1 Groundwater Remediation Objectives for Groundwater Component of the Groundwater Ingestion Route for Class 1 groundwater, the groundwater shall be managed off-site as a special waste or hazardous waste as applicable. Special waste groundwater shall be containerized and trucked to an off-site treatment facility, or may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority. Groundwater discharged to a sanitary sewer or combined sewer shall be pre-treated to remove particulates and measured with a calibrated flow meter to comply with applicable discharge limits. A copy of the permit shall be provided to the Engineer prior to discharging groundwater to the sanitary sewer or combined sewer.

Groundwater encountered within trenches may be managed within the trench and allowed to infiltrate back into the ground. If the groundwater cannot be managed within the trench, it may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority, or it shall be containerized and trucked to an off-site treatment facility as a special waste or hazardous waste. The Contractor is prohibited from discharging groundwater within the trench through a storm sewer. The Contractor shall install backfill plugs within the area of groundwater contamination.

One backfill plug shall be placed down gradient to the area of groundwater contamination. Backfill plugs shall be installed at intervals not to exceed 50 ft (15 m). Backfill plugs are to be 4 ft (1.2 m) long, measured parallel to the trench, full trench width and depth. Backfill plugs shall not have any fine aggregate bedding or backfill, but shall be entirely cohesive

soil or any class of concrete. The Contractor shall provide test data that the material has a permeability of less than 10^{-7} cm/sec according to ASTM D 5084, Method A or per another test method approved by the Engineer.

The Contractor shall use due care when transferring contaminated material from the area of origin to the transporter. Should releases of contaminated material to the environment occur (i.e., spillage onto the ground, etc.), the Contractor shall clean-up spilled material and place in the appropriate storage containers as previously specified. Clean-up shall include, but not be limited to, sampling beneath the material staging area to determine complete removal of the spilled material.

The Contractor shall provide engineered barriers, when required, and shall include materials sufficient to completely line excavation surfaces, including sloped surfaces, bottoms, and sidewall faces, within the areas designated for protection.

The Contractor shall obtain all documentation including any permits and/or licenses required to transport the material containing regulated substances to the disposal facility. The Contractor shall coordinate with the Engineer on the completion of all documentation. The Contractor shall make all arrangements for collection and analysis of landfill acceptance testing. The Contractor shall coordinate waste disposal approvals with the disposal facility.

The Contractor shall provide the Engineer with all transport-related documentation within two days of transport or receipt of said document(s). For management of special or hazardous waste, the Contractor shall provide the Engineer with documentation that the Contractor is operating with a valid Illinois special waste transporter permit at least two weeks before transporting the first load of contaminated material.

Transportation and disposal of material classified according to Article 669.05(a)(5) or 669.05(a)(6) shall be completed each day so that none of the material remains on-site by the close of business, except when temporary staging has been approved.

Any waste generated as a special or hazardous waste from a non-fixed facility shall be manifested off-site using the Department's county generator number provided by the Bureau of Design and Environment. An authorized representative of the Department shall sign all manifests for the disposal of the contaminated material and confirm the Contractor's transported volume. Any waste generated as a non-special waste may be managed off-site without a manifest, a special waste transporter, or a generator number.

The Contractor shall select a landfill permitted for disposal of the contaminant within the State of Illinois. The Department will review and approve or reject the facility proposed by the Contractor to use as a landfill. The Contractor shall verify whether the selected disposal facility is compliant with those applicable standards as mandated by their permit and whether the disposal 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 landfill shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth.

669.06 Non-Special Waste Certification. An authorized representative of the Department shall sign and date all non-special waste certifications. The Contractor shall be responsible for providing the Engineer with the required information that will allow the Engineer to certify the waste is not a special waste.

(a) Definition. A waste is considered a non-special waste as long as it is not:

(1) a potentially infectious medical waste;

(2) a hazardous waste as defined in 35 Ill. Admin. Code 721;

(3) an industrial process waste or pollution control waste that contains liquids, as determined using the paint filter test set forth in subdivision (3)(A) of subsection (m) of 35 Ill. Admin. Code 811.107;

(4) a regulated asbestos-containing waste material, as defined under the National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 61.141;

(5) a material containing polychlorinated biphenyls (PCB's) regulated pursuant to 40 CFR Part 761;

(6) a material subject to the waste analysis and recordkeeping requirements of 35 Ill. Admin. Code 728.107 under land disposal restrictions of 35 Ill. Admin. Code 728;

(7) a waste material generated by processing recyclable metals by shredding and required to be managed as a special waste under Section 22.29 of the Environmental Protection Act; or

(8) an empty portable device or container in which a special or hazardous waste has been stored, transported, treated, disposed of, or otherwise handled.

(b) Certification Information. All information used to determine the waste is not a special waste shall be attached to the certification. The information shall include but not be limited to:

(1) the means by which the generator has determined the waste is not a hazardous waste;

(2) the means by which the generator has determined the waste is not a liquid;

(3) if the waste undergoes testing, the analytic results obtained from testing, signed and dated by the person responsible for completing the analysis;

(4) if the waste does not undergo testing, an explanation as to why no testing is needed;

(5) a description of the process generating the waste; and

(6) relevant material safety data sheets.

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. 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.

Temporary staging shall be accomplished within the right-of-way and the Contractor's means and methods shall be described in the approved or amended RSPCP. Staging areas shall not be located within 200 feet (61 m) of a public or private water supply well; nor within 100 feet (30 m) of sensitive environmental receptor areas, including wetlands, rivers, streams, lakes, or designated habitat zones.

The method of staging shall consist of containerization or stockpiling as applicable for the type, classification, and physical state (i.e., liquid, solid, semisolid) of the material. Materials of different classifications shall be staged separately with no mixing or co-mingling.

When containers are used, the containers and their contents shall remain intact and inaccessible to unauthorized persons until the manner of disposal is determined. The Contractor shall be responsible for all activities associated with the storage containers including, but not limited to, the procurement, transport, and labeling of the containers. The Contractor shall not use a storage container if visual inspection of the container reveals the presence of free liquids or other substances that could cause the waste to be reclassified as a hazardous or special waste.

When stockpiles are used, they shall be covered with a minimum 20-mil plastic sheeting or tarps secured using weights or tie-downs. Perimeter berms or diversionary trenches shall be provided to contain and collect for disposal any water that drains from the soil. Stockpiles shall be managed to prevent or reduce potential dust generation.

When staging non-special waste, special waste, or hazardous waste, the following additional requirements shall apply:

(a) Non-Special Waste. When stockpiling soil classified according to Article 669.05(a)(1) or 669.05(a)(5), an impermeable surface barrier between the materials and the ground surface shall be installed. The impermeable barrier shall consist of a minimum 20-mil plastic liner material and the surface of the stockpile area shall be clean and free of debris prior to placement of the liner. Measures shall also be taken to limit or discourage access to the staging area.

(b) Special Waste and Hazardous Waste. Soil classified according to Article 669.05(a)(6) shall not be stockpiled but shall be containerized immediately upon generation in containers, tanks or containment buildings as defined by RCRA, Toxic Substances Control

Act (TSCA), and other applicable State or local regulations and requirements, including 35 Ill. Admin. Code Part 722, Standards Applicable to Generators of Hazardous Waste.

The staging area(s) shall be enclosed (by a fence or other structure) to restrict direct access to the area, and all required regulatory identification signs applicable to a staging area containing special waste or hazardous waste shall be deployed.

Storage containers shall be placed on an all-weather gravel-packed, asphalt, or concrete surface. Containers shall be in good condition and free of leaks, large dents, or severe rusting, which may compromise containment integrity. Containers must be constructed of, or lined with, materials that will not react or be otherwise incompatible with the hazardous or special waste contents. Containers used to store liquids shall not be filled more than 80 percent of the rated capacity. Incompatible wastes shall not be placed in the same container or comingled.

All containers shall be legibly labeled and marked using pre-printed labels and permanent marker in accordance with applicable regulations, clearly showing the date of waste generation, location and/or area of waste generation, and type of waste. The Contractor shall place these identifying markings on an exterior side surface of the container.

Storage containers shall be kept closed, and storage pads covered, except when access is needed by authorized personnel.

Special waste and hazardous waste shall be transported and disposed within 90 days from the date of generation.

669.08 Underground Storage Tank Removal. For the purposes of this section, an underground storage tank (UST) includes the underground storage tank, piping, electrical controls, pump island, vent pipes and appurtenances.

Prior to removing an UST, the Engineer shall determine whether the Department is considered an "owner" or "operator" of the UST as defined by the UST regulations (41 Ill. Adm. Code Part 176). Ownership of the UST refers to the Department's owning title to the UST during storage, use or dispensing of regulated substances. The Department may be considered an "operator" of the UST if it has control of, or has responsibility for, the daily operation of the UST. The Department may however voluntarily undertake actions to remove an UST from the ground without being deemed an "operator" of the UST.

In the event the Department is deemed not to be the "owner" or "operator" of the UST, the OSFM removal permit shall reflect who was the past "owner" or "operator" of the UST. If the "owner" or "operator" cannot be determined from past UST registration documents from OSFM, then the OSFM removal permit will state the "owner" or "operator" of the UST is the Department. The Department's Office of Chief Counsel (OCC) will review all UST removal permits prior to submitting any removal permit to the OSFM. If the Department is not the "owner" or "operator" of the UST then it will not register the UST or pay any registration fee.

The Contractor shall be responsible for obtaining permits required for removing the UST, notification to the OSFM, using an OSFM certified tank contractor, removal and disposal of the UST and its contents, and preparation and submittal of the OSFM Site Assessment Report in accordance with 41 Ill. Admin. Code Part 176.330.

The Contractor shall contact the Engineer and the OSFM's office at least 72 hours prior to removal to confirm the OSFM inspector's presence during the UST removal. Removal, transport, and disposal of the UST shall be according to the applicable portions of the latest revision of the "American Petroleum Institute (API) Recommended Practice 1604".

The Contractor shall collect and analyze tank content (sludge) for disposal purposes. The Contractor shall remove as much of the regulated substance from the UST system as necessary to prevent further release into the environment. All contents within the tank shall be removed, transported and disposed of, or recycled. The tank shall be removed and rendered empty according to IEPA definition.

The Contractor shall collect soil samples from the bottom and sidewalls of the excavated area in accordance with 35 Ill. Admin. Code Part 734.210(h) after the required backfill has been removed during the initial response action, to determine the level of contamination remaining in the ground, regardless if a release is confirmed or not by the OSFM on-site inspector.

In the event the UST is designated a leaking underground storage tank (LUST) by the OSFM's inspector, or confirmation by analytical results, the Contractor shall notify the Engineer and the District Environmental Studies Unit (DESU). Upon confirmation of a release of contaminants and notifications to the Engineer and DESU, the Contractor shall report the release to the Illinois Emergency Management Agency (IEMA) (e.g., by telephone or electronic mail) and provide them with whatever information is available ("owner" or "operator" shall be stated as the past registered "owner" or "operator", or the IDOT District in which the tank is located and the DESU Manager).

The Contractor shall perform the following initial response actions if a release is indicated by the OSFM inspector:

(a) Take immediate action to prevent any further release of the regulated substance to the environment, which may include removing, at the Engineer's discretion, and disposing of up to 4 ft (1.2 m) of the contaminated material, as measured from the outside dimension of the tank;

(b) Identify and mitigate fire, explosion and vapor hazards;

(c) Visually inspect any above ground releases or exposed below ground releases and prevent further migration of the released substance into surrounding soils and groundwater; and

(d) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors and free product that have migrated from the tank excavation zone and entered into subsurface structures (such as sewers or basements).

The tank excavation shall be backfilled according to applicable portions of Sections 205, 208, and 550 with a material that will compact and develop stability. All uncontaminated concrete and soil removed during tank extraction may be used to backfill the excavation, at the discretion of the Engineer.

After backfilling the excavation, the site shall be graded and cleaned.

669.09 Regulated Substances Final Construction Report. Not later than 90 days after completing this work, the Contractor shall submit a "Regulated Substances Final Construction Report (RSFCR)" to the Engineer using form BDE 2733 and required attachments. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

669.10 Method of Measurement. Non-special waste, special waste, and hazardous waste soil will be measured for payment according to Article 202.07(b) when performing earth excavation, Article 502.12(b) when excavating for structures, or by computing the volume of the trench using the maximum trench width permitted and the actual depth of the trench.

Groundwater containerized and transported off-site for management, storage, and disposal will be measured for payment in gallons (liters).

Backfill plugs will be measured in cubic yards (cubic meters) in place, except the quantity for which payment will be made shall not exceed the volume of the trench, as computed by using the maximum width of trench permitted by the Specifications and the actual depth of the trench, with a deduction for the volume of the pipe.

Engineered Barriers will be measured for payment in square yards (square meters).

669.11 Basis of Payment. The work of preparing, submitting and administering a Regulated Substances Pre-Construction Plan will be paid for at the contract lump sum price for REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN.

Regulated substances monitoring, including completion of form BDE 2732 for each day of work, will be paid for at the contract unit price per calendar day, or fraction thereof to the nearest 0.5 calendar day, for REGULATED SUBSTANCES MONITORING.

The installation of engineered barriers will be paid for at the contract unit price per square yard (square meter) for ENGINEERED BARRIER.

The work of UST removal, soil excavation, soil and content sampling, the management of excavated soil and UST content, and UST disposal, will be paid for at the contract unit price per each for UNDERGROUND STORAGE TANK REMOVAL.

The transportation and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per cubic yard (cubic meter) for

NON-SPECIAL WASTE DISPOSAL, SPECIAL WASTE DISPOSAL, or HAZARDOUS WASTE DISPOSAL.

The transportation and disposal of groundwater from an excavation determined to be contaminated will be paid for at the contract unit price per gallon (liter) for SPECIAL WASTE GROUNDWATER DISPOSAL or HAZARDOUS WASTE GROUNDWATER DISPOSAL. When groundwater is discharged to a sanitary or combined sewer by permit, the cost will be paid for according to Article 109.05.

Backfill plugs will be paid for at the contract unit price per cubic yard (cubic meter) for BACKFILL PLUGS.

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) will be paid for according to Article 109.04. The Department will not be responsible for any additional costs incurred, if mismanagement of the staging area, storage containers, or their contents by the Contractor results in excess cost expenditure for disposal or other material management requirements.

Payment for accumulated stormwater removal and disposal will be according to Article 109.04. Payment will only be allowed if appropriate stormwater and erosion control methods were used.

Payment for decontamination, labor, material, and equipment for monitoring areas beyond the specified areas, with the Engineer's prior written approval, will be according to Article 109.04.

When the waste material for disposal requires sampling for landfill disposal acceptance, the samples shall be analyzed for TCLP VOCs, SVOCs, RCRA metals, pH, ignitability, and paint filter test. The analysis will be paid for at the contract unit price per each for SOIL DISPOSAL ANALYSIS using EPA Methods 1311 (extraction), 8260B for VOCs, 8270C for SVOCs, 6010B and 7470A for RCRA metals, 9045C for pH, 1030 for ignitability, and 9095A for paint filter.

The work of preparing, submitting and administering a Regulated Substances Final Construction Report will be paid for at the contract lump sum price REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT."

80407

SILT FENCE, INLET FILTERS, GROUND STABILIZATION AND RIPRAP FILTER FABRIC (BDE)

Effective: November 1, 2019
Revised: April 1, 2020

Revise Article 280.02(m) and add Article 280.02(n) so the Standard Specifications read:

"(m) Above Grade Inlet Filter (Fitted)..... 1081.15(j)
(n) Above Grade Inlet Filter (Non-Fitted).....1081.15(k)"

Revise the last sentence of the first paragraph in Article 280.04(c) of the Standard Specifications to read:

"The protection shall be constructed with hay or straw bales, silt filter fence, above grade inlet filters (fitted and non-fitted), or inlet filters.

Revise the first sentence of the second paragraph in Article 280.04(c) of the Standard Specifications to read:

"When above grade inlet filters (fitted and non-fitted) are specified, they shall be of sufficient size to completely span and enclose the inlet structure."

Revise Article 1080.02 of the Standard Specifications to read:

"**1080.02 Geotextile Fabric.** The fabric for silt filter fence shall consist of woven fabric meeting the requirements of AASHTO M 288 for unsupported silt fence.

The fabric for ground stabilization shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 2 and nonwoven fabrics shall be Class 1 according to AASHTO M 288.

The physical properties for silt fence and ground stabilization fabrics shall be according to the following.

PHYSICAL PROPERTIES			
	Silt Fence Woven [1/]	Ground Stabilization Woven [2/]	Ground Stabilization Nonwoven [2/]
Grab Strength, lb (N) [3/] ASTM D 4632	123 (550) MD 101 (450) XD	247 (1100) min. [4/]	202 (900) min. [4/]
Elongation/Grab Strain, % ASTM D 4632 [4/]	49 max.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 [4/]	--	90 (400) min.	79 (350) min.

Puncture Strength, lb (N) ASTM D 6241 4/	--	494 (2200) min.	433 (1925) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 5/	30 (0.60) max.	40 (0.43) max.	40 (0.43) max.
Permittivity, sec^{-1} ASTM D 4491	0.05 min.		
Ultraviolet Stability, % retained strength after 500 hours of exposure ASTM D 4355	70 min.	50 min.	50 min.

1/ NTPEP results or manufacturer's certification to meet test requirements.

2/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.

3/ MD = Machine direction. XD = Cross-machine direction.

4/ Values represent the minimum average roll value (MARV) in the weaker principle direction, MD or XD.

5/ Values represent the maximum average roll value."

Revise Article 1080.03 of the Standard Specifications to read:

"**1080.03 Filter Fabric.** The filter fabric shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 3 for riprap gradations RR 4 and RR 5, and Class 2 for RR 6 and RR 7 according to AASHTO M 288. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) shall not be permitted. Nonwoven fabrics shall be Class 2 for riprap gradations RR 4 and RR 5, and Class 1 for RR 6 and RR 7 according to AASHTO M 288. After forming, the fabric shall be processed so that the yarns or filaments retain their relative positions with respect to each other. The fabric shall be new and undamaged.

The filter fabric shall be manufactured in widths of not less than 6 ft (2 m). Sheets of fabric may be sewn together with thread of a material meeting the chemical requirements given for the yarns or filaments to form fabric widths as required. The sheets of filter fabric shall be sewn together at the point of manufacture or another approved location.

The filter fabric shall be according to the following.

PHYSICAL PROPERTIES 1/				
	Gradation Nos. RR 4 & RR 5		Gradation Nos. RR 6 & RR 7	
	Woven	Nonwoven	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 2/	180 (800) min.	157 (700) min.	247 (1100) min.	202 (900) min.
Elongation/Grab Strain, % ASTM D 4632 2/	49 max.	50 min.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 2/	67 (300) min.	56 (250) min.	90 (400) min.	79 (350) min.
Puncture Strength, lb (N) ASTM D 6241 2/	370 (1650) min.	309 (1375) min.	494 (2200) min.	433 (1925) min.
Ultraviolet Stability, % retained strength after 500 hours of exposure - ASTM D 4355	50 min.			

1/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.

2/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

As determined by the Engineer, the filter fabric shall meet the requirements noted in the following after an onsite investigation of the soil to be protected.

Soil by Weight (Mass) Passing the No. 200 sieve (75 µm), %	Apparent Opening Size, Sieve No. (mm) - ASTM D 4751 1/	Permittivity, sec^{-1} ASTM D 4491
49 max.	60 (0.25) max.	0.2 min.
50 min.	70 (0.22) max.	0.1 min.

1/ Values represent the maximum average roll value."

Revise Article 1081.15(h)(3)a of the Standard Specifications to read:

"a. Inner Filter Fabric Bag. The inner filter fabric bag shall be constructed of woven yarns or nonwoven filaments made of polyolefins or polyesters with a minimum silt and debris capacity of 2.0 cu ft (0.06 cu m). Woven fabric shall be Class 3 and nonwoven fabric shall be Class 2 according to AASHTO M 288. The fabric bag shall be according to the following.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 1/	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 1/	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 1/	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 1/	370 (1650) min.	309 (1375) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 2/	60 (0.25) max.	
Permittivity, sec^{-1} ASTM D 4491	2.0 min.	
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.	

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value."

Revise Article 1081.15(i)(1) of the Standard Specifications to read:

"(i) Urethane Foam/Geotextile. Urethane foam/geotextile shall be triangular shaped having a minimum height of 10 in. (250 mm) in the center with equal sides and a minimum 20 in. (500 mm) base. The triangular shaped inner material shall be a low density urethane foam. The outer geotextile fabric cover shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters placed around the inner material and shall extend beyond both sides of the triangle a minimum of 18 in. (450 mm). Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288.

(1) The geotextile shall meet the following properties.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 1/	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 1/	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 1/	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 1/	370 (1650) min.	309 (1375) min.

Apparent Opening Size, Sieve No. (mm) ASTM D 4751 2/	30 (0.60) max.
Permittivity, sec^{-1} ASTM D 4491	2.0 min.
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value."

Add the following to Article 1081.15(i) of the Standard Specifications.

"(3) Certification. The manufacturer shall furnish a certificate with each shipment of urethane foam/geotextile assemblies stating the amount of product furnished and that the material complies with these requirements."

Revise the title and first sentence of Article 1081.15(j) of the Standards Specifications to read:

"(j) Above Grade Inlet Filters (Fitted). Above grade inlet filters (fitted) shall consist of a rigid polyethylene frame covered with a fitted geotextile filter fabric."

Revise Article 1081.15(j)(2) of the Standard Specifications to read:

(2) Fitted Geotextile Filter Fabric. The fitted geotextile filter fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288. The filter shall be fabricated to provide a direct fit to the frame. The top of the filter shall integrate a coarse screen with a minimum apparent opening size of 1/2 in. (13 mm) to allow large volumes of water to pass through in the event of heavy flows. The filter shall have integrated anti-buoyancy pockets capable of holding a minimum of 3.0 cu ft (0.08 cu m) of stabilization material. Each filter shall have a label with the following information sewn to or otherwise permanently adhered to the outside: manufacturer's name, product name, and lot, model, or serial number. The fitted geotextile filter fabric shall be according to the table in Article 1081.15(h)(3)a above."

Add Article 1081.15(k) to the Standard Specifications to read:

"(k) Above Grade Inlet Filters (Non-Fitted). Above grade inlet filters (non-fitted) shall consist of a geotextile fabric surrounding a metal frame. The frame shall consist of either a) a circular cage formed of welded wire mesh, or b) a collapsible aluminum frame, as described below.

(1) Frame Construction.

a) Welded Wire Mesh Frame. The frame shall consist of 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh formed of #10 gauge (3.42 mm) steel conforming to ASTM A 185. The mesh shall be 30 in. (750 mm) tall and formed into a 42 in. (1.05 m) minimum diameter cylinder.

b) Collapsible Aluminum Frame. The collapsible aluminum frame shall consist of grade 6036 aluminum. The frame shall have anchor lugs that attach it to the inlet grate, which shall resist movement from water and debris. The collapsible joints of the frame shall have a locking device to secure the vertical members in place, which shall prevent the frame from collapsing while under load from water and debris.

(2) Geotextile Fabric. The geotextile fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. The woven filter fabric shall be a Class 3 and the nonwoven filter fabric shall be a Class 2 according to AASHTO M 288. The geotextile fabric shall be according to the table in Article 1081.15(h)(3)a above.

(3) Geotechnical Fabric Attachment to the Frame.

a) Welded Wire Mesh Frame. The woven or nonwoven geotextile fabric shall be wrapped 3 in. (75 mm) over the top member of a 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh frame and secured with fastening rings constructed of wire conforming to ASTM A 641, A 809, A 370, and A 938 at 6 in. (150 mm) on center. The fastening rings shall penetrate both layers of geotextile and securely close around the steel mesh. The geotextile shall be secured to the sides of the welded wire mesh with fastening rings at a spacing of 1 per sq ft (11 per sq m) and securely close around a steel member.

b) Collapsible Aluminum Frame. The woven or nonwoven fabric shall be secured to the aluminum frame along the top and bottom of the frame perimeter with strips of aluminum secured to the perimeter member, such that the anchoring system provides a uniformly distributed stress throughout the geotechnical fabric.

(4) Certification. The manufacturer shall furnish a certificate with each shipment of above grade inlet filter assemblies stating the amount of product furnished and that the material complies with these requirements."

80419

STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004
Revised: August 1, 2017

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)
Structural Steel
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of $10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

(a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.

(b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$SCA = Q \times D$

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in lb (kg)
D = price factor, in dollars per lb (kg)

$D = MPI_M - MPI_L$

Where: MPI_M = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

MPI_L = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price,. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the MPI_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the MPI_L and MPI_M in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Attachment

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness)	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness)	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness)	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Mesh Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 – 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 – 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 – 15.2 m)	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 – 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 – 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 – 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 – 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)

80127

STRUCTURAL TIMBER (BDE)

Effective: August 1, 2019

Revise Article 1007.03 of the Standard Specifications to read:

"**1007.03 Structural Timber.** Structural timber shall be southern pine, Douglas fir (coast region), or other species listed in Chapter 8 of the AASHTO LRFD Bridge Design Specifications.

(a) Treated and Untreated Timber. When treated material is specified, the method of treatment shall be according to Article 1007.12. There shall be no heartwood requirements for timber which is to receive a preservative treatment and the amount of sapwood shall not be limited. All timber to be used without preservative treatment shall contain not less than 85 percent of heartwood measured on the girth.

(b) Standard Sizes and Grading Requirements. Rough cut and surfaced timber shall meet the applicable requirements for size and grading according to ASTM D 245 and the Southern Pine Inspection Bureau, the West Coast Lumber Inspection Bureau, or other agencies accredited by the American Lumber Standard Committee, except as provided herein.

All pieces shall be cut to length with square ends.

The dimensions and surfacing requirements will be shown in the contract.

(c) Strength Requirements. The design strengths for structural timber shall be as shown on the plans, and according to the Southern Pine Inspection Bureau, the West Coast Lumber Inspection Bureau, or other agencies accredited by the American Lumber Standard Committee. Additionally, the design strengths shall be according to Chapter 8 of the AASHTO LRFD Bridge Design Specifications."

80413

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

SURFACE TESTING OF PAVEMENTS – IRI (BDE)

Effective: January 1, 2021

Description. This work shall consist of testing the ride quality of the finished surface of pavements, according to Illinois Test Procedure 43, "Ride Quality Testing Using the International Roughness Index (IRI)". Work shall be according to Sections 406, 407, or 420 of the Standard Specifications, except as modified herein.

Hot-Mix Asphalt (HMA) Overlays

Revise Article 406.03(h) of the Standard Specifications to read:

"(h) Pavement Surface Grinding Equipment.....1101.04"

Revise Article 406.11 of the Standard Specifications to read:

"**406.11 Surface Tests.** Prior to pavement improvements, the Engineer will measure the smoothness of the existing high-speed mainline pavement. The Contractor shall measure the smoothness of the finished high-speed mainline, low-speed mainline, and miscellaneous pavements within three days of paving. Testing shall be performed in the presence of the Engineer and according to Illinois Test Procedure 43. The pavement will be identified as high-speed mainline, low-speed mainline, or miscellaneous as follows.

(a) Test Sections

(1) High-Speed Mainline Pavement. High-speed mainline pavement shall consist of pavements, ramps, and loops with a posted speed limit greater than 40 mph. These sections shall be tested with an inertial profiling system (IPS).

(2) Low-Speed Mainline Pavement. Low-speed mainline pavement shall consist of pavements, ramps, and loops with a posted speed limit of 40 mph or less. These sections shall be tested with an IPS.

(3) Miscellaneous Pavement. Miscellaneous pavement includes segments that either cannot readily be tested by an inertial profiler or conditions beyond the control of the contractor preclude the achievement of smoothness levels typically achievable with mainline pavement construction. This may include the following examples or as determined by the Engineer.

(a) Pavement on horizontal curves with a centerline radius of curvature of less than or equal to 1,000 ft (300 m) and the pavement within the superelevation transition of such curves;

(b) Pavement on vertical curves having a length less than or equal to 200 ft (60 m) in combination with an algebraic change in tangent grade greater than or equal to 3 percent as may occur on urban ramps or other constricted-space facilities;

(c) The first and last 50 ft (15 m) of a pavement section where the Contractor is not responsible for the adjoining surface;

(d) Intersections and the 25 ft (7.6 m) before and after an intersection or end of radius return;

(e) Variable width pavements;

(f) Side street returns, to the end of radius return;

(g) Crossovers;

(h) Connector pavement from the mainline pavement expansion joint to the bridge approach slab;

(i) Bridge approach slab;

(j) Pavement that must be constructed in multiple short segments, typically defined as 600 ft (180m) or less;

(k) Pavement within 25 ft (7.6 m) of manholes, utility structures, or other appurtenances;

(l) Turn lanes.

Miscellaneous pavement shall be tested using a 16 ft (5 m) straightedge.

(4) International Roughness Index (IRI). An index computed from a longitudinal profile measurement using a quarter-car simulation at a simulation speed of 50 mph (80 km/h).

(5) Mean Roughness Index (MRI). The average of the IRI values for the right and left wheel tracks.

(6) Areas of Localized Roughness (ALR). Isolated areas of roughness, which can cause significant increase in the calculated MRI for a given sublot.

(7) Lot. A lot will be defined as a continuous strip of pavement 1 mile (1,600 m) long and one lane wide. When the length of a continuous strip of pavement is less than 1 mile (1,600 m), that pavement will be included in an adjacent lot. Structures will be omitted when measuring pavement length, but will not be considered as a discontinuity and

the numbering of sublots will not restart. The limits of the structure shall include the entire length between the outside ends of both connector pavements.

(8) Sublot. Lots will be divided into 0.1 mile (160 m) sublots. A partial sublot greater than or equal to 264 ft (80 m) resulting from an interruption in the pavement will be subject to the same evaluation as a whole sublot. Partial sublots less than 264 ft (80 m) shall be included with the previous sublot for evaluation purposes.

(b) Corrective Work. Corrective work shall be completed according to the following.

(1) High-Speed Mainline Pavement. For high-speed mainline pavement, any 25 ft (7.6 m) interval with an ALR in excess of 150 in./mile (2,400 mm/km) will be identified by the Engineer and shall be corrected by the Contractor. Any sublot having a MRI greater than 100.0 in./mile (1,580 mm/km), including ALR, shall be corrected to reduce the MRI to the full pay threshold, or replaced at the Contractor's option.

(2) Low-Speed Mainline and Miscellaneous Pavements. Bumps in low-speed mainline pavement or miscellaneous pavement which exceed the 5/16 in. (8 mm) tolerance will be identified by the Engineer and shall be corrected by the Contractor.

Corrective work shall be completed with pavement surface grinding equipment or by removing and replacing the pavement. Corrective work shall be applied to the full lane width. When completed, the corrected area shall have uniform texture and appearance, with the beginning and ending of the corrected area normal to the centerline of the paved surface.

Upon completion of the corrective work, the surface of the sublot(s) shall be retested. The Contractor shall furnish the data and reports to the Engineer within 2 working days after corrections are made. If the MRI and/or ALR still do not meet the requirements, additional corrective work shall be performed. For sublot(s) that are replaced, assessments will be based on the MRI determined after replacement.

Corrective work shall be at no additional cost to the Department.

(c) Smoothness Assessments. Assessments will be paid to or deducted from the Contractor for each sublot of mainline pavement per the Smoothness Assessment Schedule. Assessments will be based on the MRI of each sublot prior to performing any corrective work unless the Contractor has chosen to remove and replace the sublot. For sublots that are replaced, assessments will be based on the MRI determined after replacement.

(1) High-Speed Mainline Pavement. The upper MRI thresholds for high-speed mainline pavement are dependent on the MRI of the existing pavement before construction (MRI_0) and shall be determined as follows.

Upper MRI Thresholds 1/	MRI Thresholds (High-Speed, HMA Overlay)	
	$MRI_0 \leq 125.0$ in./mile (≤ 1,975 mm/km)	$MRI_0 > 125.0$ in./mile 1/ (> 1,975 mm/km)
Incentive (MRI_I)	45.0 in./mile (710 mm/km)	$0.2 \times MRI_0 + 20$
Full Pay (MRI_F)	75.0 in./mile (1,190 mm/km)	$0.2 \times MRI_0 + 50$
Disincentive (MRI_D)	100.0 in./mile (1,975 mm/km)	$0.2 \times MRI_0 + 75$

1/ MRI_0, MRI_I, MRI_F, and MRI_D shall be in in./mile for calculation.

Smoothness assessments for high-speed mainline pavement shall be determined as follows.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, HMA Overlay)	
Mainline Pavement MRI Range	Assessment Per Sublot 1/
$MRI \leq MRI_I$	$+ (MRI_I - MRI) \times \$33.00$ 2/
$MRI_I < MRI \leq MRI_F$	+ $0.00
$MRI_F < MRI \leq MRI_D$	$- (MRI - MRI_F) \times \$20.00$
$MRI > MRI_D$	– $500.00

1/ MRI, MRI_I, MRI_F, and MRI_D shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed $500.00.

Smoothness assessments will not be paid or deducted until all other contract requirements for the pavement are satisfied. Pavement that is corrected or replaced for reasons other than smoothness, shall be retested as stated herein."

Hot-Mix Asphalt (HMA) Pavement (Full-Depth)

Revise the first paragraph of Article 407.03 of the Standard Specifications to read:

"**407.03 Equipment.** Equipment shall be according to Article 406.03."

Revise Article 407.09 of the Standard Specifications to read:

"**407.09 Surface Tests.** The finished surface of the pavement shall be tested for smoothness according to Article 406.11, except as follows:

The testing of the existing pavement prior to improvements shall not apply and the smoothness assessment for high-speed mainline pavement shall be determined according to the following table.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, Full-Depth HMA)	
Mainline Pavement MRI, in./mile (mm/km)	Assessment Per Sublot 1/
≤ 45.0 (710)	+ (45 – MRI) × $80.00 2/
> 45.0 (710) to 75.0 (1,190)	+ $0.00
> 75.0 (1,190) to 100.0 (1,580)	– (MRI – 75) × $30.00
> 100.0 (1,580)	– $750.00

1/ MRI shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed $1,200.00."

Portland Cement Concrete Pavement

Delete Article 420.03(i) of the Standard Specifications.

Revise Article 420.03(j) of the Standard Specifications to read:

"(i) Coring Machine (Note 1)"

Revise Article 420.10 of the Standard Specifications to read:

"**420.10 Surface Tests.** The finished surface of the pavement shall be tested for smoothness according to Article 406.11, except as follows.

The testing of the existing pavement prior to improvements shall not apply. The Contractor shall measure the smoothness of the finished surface of the pavement after the pavement has attained a flexural strength of 250 psi (3,800 kPa) or a compressive strength of 1,600 psi (20,700 kPa).

Membrane curing damaged during testing shall be repaired as directed by the Engineer at no additional cost to the Department.

(a) Corrective Work. No further texturing for skid resistance will be required for areas corrected by grinding. Protective coat shall be reapplied to ground areas according to Article 420.18 at no additional cost to the Department.

Pavement corrected by removal and replacement, shall be corrected in full panel sizes.

(b) Smoothness Assessments. Smoothness assessment for high-speed mainline pavement shall be determined as follows.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, PCC)	
Mainline Pavement MRI, in./mile (mm/km) 3/	Assessment Per Sublot 1/
≤ 45.0 (710)	+ (45 – MRI) × $120.00 2/
> 45.0 (710) to 75.0 (1,190)	+ $0.00
> 75.0 (1,190) to 100.0 (1,580)	– (MRI – 75) × $45.00
> 100.0 (1,580)	– $1,125.00

1/ MRI shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed $1,800.00.

3/ If pavement is constructed with traffic in the lane next to it, then an additional 10 in./mile will be added to the upper thresholds."

Testing Equipment

Delete Article 1101.10 of the Standard Specifications.

80435

TEMPORARY PAVEMENT MARKING (BDE)

Effective: April 1, 2012
Revised: April 1, 2017

Revise Article 703.02 of the Standard Specifications to read:

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

(a) Pavement Marking Tape, Type I and Type III 1095.06
(b) Paint Pavement Markings 1095.02
(c) Pavement Marking Tape, Type IV ..... 1095.11"

Revise the second paragraph of Article 703.05 of the Standard Specifications to read:

"Type I marking tape or paint shall be used at the option of the Contractor, except paint shall not be applied to the final wearing surface unless authorized by the Engineer for late season applications where tape adhesion would be a problem. Type III or Type IV marking tape shall be used on the final wearing surface when the temporary pavement marking will conflict with the permanent pavement marking such as on tapers, crossovers and lane shifts."

Revise Article 703.07 of the Standard Specifications to read:

"**703.07 Basis of Payment.** This work will be paid for as follows.

a) Short Term Pavement Marking. Short term pavement marking will be paid for at the contract unit price per foot (meter) for SHORT TERM PAVEMENT MARKING. Removal of short term pavement markings will be paid for at the contract unit price per square foot (square meter) for SHORT TERM PAVEMENT MARKING REMOVAL.

b) Temporary Pavement Marking. Where the Contractor has the option of material type, temporary pavement marking will be paid for at the contract unit price per foot (meter) for TEMPORARY PAVEMENT MARKING of the line width specified, and at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS.

Where the Department specifies the use of pavement marking tape, the Type III or Type IV temporary pavement marking will be paid for at the contract unit price per foot (meter) for PAVEMENT MARKING TAPE, TYPE III or PAVEMENT MARKING TAPE, TYPE IV of the line width specified and at the contract unit price per square feet (square meter) for PAVEMENT MARKING TAPE, TYPE III - LETTERS AND SYMBOLS or PAVEMENT MARKING TAPE, TYPE IV – LETTERS AND SYMBOLS.

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

When temporary pavement marking is shown on the Standard, the cost of the temporary pavement marking and its removal will be included in the cost of the Standard."

Add the following to Section 1095 of the Standard Specifications:

"**1095.11 Pavement Marking Tape, Type IV.** The temporary, preformed, patterned markings shall consist of a white or yellow tape with wet retroreflective media incorporated to provide immediate and continuing retroreflection during both wet and dry conditions. The tape shall be manufactured without the use of heavy metals including lead chromate pigments or other similar, lead-containing chemicals.

The white and yellow Type IV marking tape shall meet the Type III requirements of Article 1095.06 and the following.

(a) Composition. The retroreflective pliant polymer pavement markings shall consist of a mixture of high-quality polymeric materials, pigments and glass beads distributed throughout its base cross-sectional area, with a layer of wet retroreflective media bonded to a durable polyurethane topcoat surface. The patterned surface shall have approximately 40% ± 10% of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed beads or particles.

(b) Retroreflectance. The white and yellow markings shall meet the following for initial dry and wet retroreflectance.

(1) Dry Retroreflectance. Dry retroreflectance shall be measured under dry conditions according to ASTM D 4061 and meet the values described in Article 1095.06 for Type III tape.

(2) Wet Retroreflectance. Wet retroreflectance shall be measured under wet conditions according to ASTM E 2177 and meet the values shown in the following table.

Wet Retroreflectance, Initial R_L

Color	R_L 1.05/88.76
White	300
Yellow	200

(c) Color. The material shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and a two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

Color	Daylight Reflectance %Y
White	65 minimum
*Yellow	36-59

*Shall match Federal 595 Color No. 33538 and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

(d) Skid Resistance. The surface of the markings shall provide an average minimum skid resistance of 50 BPN when tested according to ASTM E 303.

(e) Sampling, Testing, Acceptance, and Certification. Prior to approval and use of the wet reflective, temporary, removable pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, and date of manufacture.

After approval by the Department, samples and certification by the manufacturer shall be submitted for each batch used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, manufacturer's name, and date of manufacture.

All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer."

80298

TRAFFIC CONTROL DEVICES - CONES (BDE)

Effective: January 1, 2019

Revise Article 701.15(a) of the Standard Specifications to read:

"(a) Cones. Cones are used to channelize traffic. Cones used to channelize traffic at night shall be reflectorized; however, cones shall not be used in nighttime lane closure tapers or nighttime lane shifts."

Revise Article 1106.02(b) of the Standard Specifications to read:

"(b) Cones. Cones shall be predominantly orange. Cones used at night that are 28 to 36 in. (700 to 900 mm) in height shall have two white circumferential stripes. If non-reflective spaces are left between the stripes, the spaces shall be no more than 2 in. (50mm) in width. Cones used at night that are taller than 36 in. (900 mm) shall have a minimum of two white and two fluorescent orange alternating, circumferential stripes with the top stripe being fluorescent orange. If non-reflective spaces are left between the stripes, the spaces shall be no more than 3 in. (75 mm) in width.

The minimum weights for the various cone heights shall be 4 lb for 18 in. (2 kg for 450 mm), 7 lb for 28 in. (3 kg for 700 mm), and 10 lb for 36 in. (5 kg for 900 mm) with a minimum of 60 percent of the total weight in the base. Cones taller than 36 in. shall be weighted per the manufacturer's specifications such that they are not moved by wind or passing traffic."

80409

TRAINING SPECIAL PROVISIONS (BDE) This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be . In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather then clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

METHOD OF MEASUREMENT The unit of measurement is in hours.

BASIS OF PAYMENT This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

20338

WARM MIX ASPHALT (BDE)

Effective: January 1, 2012
Revised: April 1, 2016

Description. This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

Equipment.

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

"**1102.01 Hot-Mix Asphalt Plant.** The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, "Approval of Hot-Mix Asphalt Plants and Equipment". Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements."

Add the following to Article 1102.01(a) of the Standard Specifications.

"(11) Equipment for Warm Mix Technologies.

a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of ± 2 percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.

b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes."

Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

"(e) Warm Mix Technologies.

(1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.

(2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification."

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

"The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C). WMA shall be delivered at a minimum temperature of 215 °F (102 °C)."

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

80288

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012
Revised: April 2, 2015

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

80302

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

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within working days.

80071

PIPE UNDERDRAINS FOR STRUCTURES
Effective: May 17, 2000
Revised: January 22, 2010

Description. This work shall consist of furnishing and installing a pipe underdrain system as shown on the plans, as specified herein, and as directed by the Engineer.

Materials. Materials shall meet the requirements as set forth below:

The perforated pipe underdrain shall be according to Article 601.02 of the Standard Specifications. Outlet pipes or pipes connecting to a separate storm sewer system shall not be perforated.

The drainage aggregate shall be a combination of one or more of the following gradations, FA1, FA2, CA5, CA7, CA8, CA11, or CA13 thru 16, according to Sections 1003 and 1004 of the Standard Specifications.

The fabric surrounding the drainage aggregate shall be Geotechnical Fabric for French Drains according to Article 1080.05 of the Standard Specifications.

Construction Requirements. All work shall be according to the applicable requirements of Section 601 of the Standard Specifications except as modified below.

The pipe underdrains shall consist of a perforated pipe drain situated at the bottom of an area of drainage aggregate wrapped completely in geotechnical fabric and shall be installed to the lines and gradients as shown on the plans.

Method of Measurement. Pipe Underdrains for Structures shall be measured for payment in feet (meters), in place. Measurement shall be along the centerline of the pipe underdrains. All connectors, outlet pipes, elbows, and all other miscellaneous items shall be included in the measurement. Concrete headwalls shall be included in the cost of Pipe Underdrains for Structures, but shall not be included in the measurement for payment.

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for PIPE UNDERDRAINS FOR STRUCTURES of the diameter specified. Furnishing and installation of the drainage aggregate, geotechnical fabric, forming holes in structural elements and any excavation required, will not be paid for separately, but shall be included in the cost of the pipe underdrains for structures.

SLIPFORM PARAPET
Effective: June 1, 2007
Revised: March 1, 2019

The following shall be added to the end of Article 503.16(b) of the Standard Specifications.

(3) Slipforming parapets. Unless otherwise prohibited herein or on the plans, at the option of the Contractor, concrete parapets on bridge decks may be constructed by slipforming in lieu of the conventional forming methods. Slipforming will not be permitted for curved parapets on a radius of 1500ft (457 m) or less.

The slipform machine shall be self-propelled and have automatic horizontal and vertical grade control. For 34 inch (864 mm) and 39 inch (991 mm) tall parapets the machine shall be equipped with a minimum of four (4) vibrators. For 42 inch (1.067 m) and 44 inch (1.118 m) tall parapets the machine shall be equipped with a minimum of five (5) vibrators. The equipment shall be approved by the Engineer before use.

If the Contractor wishes to use the slipform parapet option for 44 inch (1.067 m) tall parapets he/she shall construct a test section in a temporary location to demonstrate his/her ability to construct the parapets without defect. The test section shall be constructed under similar anticipated weather conditions, using the same means and methods, equipment, operator, concrete plant, concrete mix design, and slump as proposed for the permanent slipform parapets.

The test section shall be at least 50 feet (15 meters) in length and shall be of the same cross section shown on the plans. The contractor shall place all of the reinforcement embedded in the parapet shown on the plans. Upon completion of the test section, the Contractor shall saw cut the test section into 2 foot (600 mm) segments and separate the segments for inspection by the Engineer.

The test section shall demonstrate to the satisfaction of the Engineer that the Contractor can slipform the parapets on this project without defects. The acceptance of the test section does not constitute acceptance of the slipform parapets in place.

The concrete mix design may combine two or more coarse aggregate sizes, consisting of CA-7, CA-11, CA-13, CA-14, and CA-16, provided a CA-7 or CA-11 is included in the blend in a proportion approved by the Engineer.

The slipform machine speed shall not exceed 3 ft (0.9 m) per minute. Any section of parapet placed with the slipform machine moving in excess of the maximum allowed speed will be rejected. Any time the speed of the machine drops below 0.5 ft (150 mm) per minute will be considered a stoppage of the slipforming operation, portions of parapet placed with three or more intermittent stoppages within any 15 ft (4.6 m) length will be rejected. The contractor shall schedule concrete delivery to maintain a uniform delivery rate of concrete into the slipform machine. If delivery of concrete from the truck into the slipforming machine

is interrupted by more than 15 minutes, the portion of the wall within the limits of the slipform machine will be rejected. Any portion of the parapet where the slipforming operation is interrupted or stopped within the 15 minute window may be subject to coring to verify acceptance.

If the Contractor elects to slipform, the parapet cross-sectional area and reinforcement bar clearances shall be revised according to the details for the Concrete Parapet Slipforming Option. In addition, if embedded conduit(s) are detailed, then the contractor shall utilize the alternate reinforcement as detailed.

The use of cast-in-place anchorage devices for attaching appurtenances and/or railings to the parapets will not be allowed in conjunction with slipforming of parapets. Alternate means for making these attachments shall be as detailed on the plans or as approved by the Engineer.

All reinforcement bar intersections within the parapet cross section shall be 100 percent tied utilizing saddle ties, wrap and saddle ties or figure eight ties to maintain rigidity during concrete placement. At pre-planned sawcut joints in the parapet, Glass Fiber Reinforced Polymer (GFRP) reinforcement shall be used to maintain the rigidity of the reinforcement cage across the proposed joints as detailed for the Concrete Parapet Slipforming Option.

Glass Fiber Reinforced Polymer (GFRP) reinforcement shall be subject to approval by the Engineer. Other non-ferrous reinforcement may be proposed for use but shall be subject to approval by the Engineer. GFRP reinforcement shall be tied the same as stated in the previous paragraph.

The Contractor may propose supplemental reinforcement for stiffening to prevent movement of the reinforcement cage and/or for conduit support subject to approval by the Engineer.

Clearances for these bars shall be the same as shown for the required bars and these bars shall be epoxy coated. If the additional reinforcement is used, it shall be at no additional cost to the Department.

For projects with plan details specifying parapet joints spaced greater than 20 ft (6 m) apart, additional sawcut joints, spaced between 10 ft (3 m) and 20 ft (6 m), shall be placed as directed by the Engineer. The horizontal reinforcement extending through the proposed joints shall be precut to provide a minimum of 4 in. (100 mm) gap, centered over the joint, between rebar ends. The ends of the reinforcement shall be repaired according to Article 508.04.

After the slipform machine has been set to proper grade and prior to concrete placement, the clearance between the slipform machine inside faces and reinforcement bars shall be checked during a dry run by the Contractor in the presence of the Engineer. The dry run shall not begin until the entire reinforcing cage has been tied and the Engineer has verified and approved the placement and tying of the reinforcing bars. Any reinforcement bars

found to be out of place by more than ½ in. (13 mm), or any dimensions between bars differing from the plans by more than ½ in. (13 mm) shall be re-tied to the plan dimensions.

During the dry run and in the presence of the Engineer, the Contractor shall check the clearance of the reinforcement bars from the inside faces of the slipform mold. In all locations, the Contractor shall ensure the reinforcement bars have the minimum cover distance shown on the plans. This dry run check shall be made for the full distance that is anticipated to be placed in the subsequent pour. Reinforcement bars found to have less than the minimum clearance shall be adjusted and the dry run will be performed again, at least in any locations that have been readjusted.

For parapets adjacent to the watertable, the contractor shall, for the duration of the construction and curing of the parapet, provide and maintain an inspection platform along the back face of the parapet. The inspection platform shall be rigidly attached to the bridge superstructure and be of such design to allow ready movement of inspection personnel along the entire length of the bridge.

The aluminum cracker plates as detailed in the plans shall be securely tied in place and shall be coated or otherwise treated to minimize their potential reaction with wet concrete. In lieu of chamfer strips at horizontal and vertical edges, radii may be used. Prior to slipforming, the Contractor shall verify proper operation of the vibrators using a mechanical measuring device subject to approval by the Engineer.

The top portion of the joint shall be sawcut as shown in the details for the Concrete Parapet Slipforming Option. Sawing of the joints shall commence as soon as the concrete has hardened sufficiently to permit sawing without excessive raveling. All joints shall be sawed to the full thickness before uncontrolled shrinkage cracking takes place but no later than 8 hours after concrete placement. The sawcut shall be approximately 3/8 in. (10 mm) wide and shall be performed with a power circular concrete saw. The joints shall be sealed with an approved polyurethane sealant, conforming to ASTM C 920, Type S, Grade NS, Class 25, Use T, to a minimum depth of 1/2 in. (12 mm), with surface preparation and installation according to the manufacturer's written instructions. Cork, hemp or other compressible material may be used as a backer. The sawcut will not require chamfered edges.

Ends of the parapet shall be formed and the forms securely braced. When slipforming of parapets with cross sectional discontinuities such as light standards, junction boxes or other embedded appurtenances except for name plates, is allowed, the parapet shall be formed for a minimum distance of 4 ft (1.2 m) on each side of the discontinuity.

For acceptance and rejection purposes a parapet section shall be defined as the length of parapet between adjacent vertical parapet joints.

The maximum variance of actual to proposed longitudinal alignment shall not exceed ±3/4 in. (20 mm) with no more than 1/4 inch in 10 ft (6 mm in 3 m). Notwithstanding this tolerance, abrupt variance in actual alignment of 1/2 inch in 10 ft (13 mm in 3 m) will be cause for rejection of the parapet section.

In addition, all surfaces shall be checked with a 10 ft (3 m) straight edge furnished and used by the Contractor as the concrete is extruded from the slipform mold. Continued variations in the barrier surface exceeding 1/4 inch in 10 ft (6 mm in 3 m) will not be permitted and remedial action shall immediately be taken to correct the problem.

The use of equipment or methods which result in dimensions outside the tolerance limits shall be discontinued. Parapet sections having dimensions outside the tolerance limits will be rejected.

Any visible indication that less than specified cover of concrete over the reinforcing bars has been obtained, or of any cracking, tearing or honeycombing of the plastic concrete, or any location showing diagonal or horizontal cracking will be cause for rejection of the parapet section in which they are found.

The vertical surfaces at the base of the barrier within 3 in. (75 mm) of the deck surface shall be trowelled true after passage of the slipform machine. Hand finishing of minor sporadic surface defects may be allowed at the discretion of the Engineer. All surfaces of the parapet except the top shall receive a final vertical broom finish. Any deformations or bulges remaining after the initial set shall be removed by grinding after the concrete has hardened.

Slipformed parapets shall be wet cured according to either Article 1020.13(a)(3) or Article 1020.13(a)(5). For either method, the concrete surface shall be covered within 30 minutes after it has been finished. The cotton mat or burlap covering shall be held in place with brackets or another method approved by the Engineer. The Contractor shall have the option, during the period from April 16 through October 31, to delay the start of wet curing by applying a linseed oil emulsion curing compound. Exercising this option waives the requirement for protective coat according to Article 503.19. The linseed oil emulsion shall be according to Article 1022.01 and shall be applied according to Articles 1020.13 Notes-General 8/ and 1020.13(a)(4). The delay for wet curing shall not exceed 3 hours after application of the linseed oil emulsion.

A maximum of three random 4 in. (100 mm) diameter cores per 100 ft (30 m) of parapet shall be taken as directed by the Engineer, but no less than three random cores shall be taken for each parapet pour. At least 2 cores shall be located to intercept the top horizontal bar. Unless otherwise directed by the Engineer, coring shall be accomplished within 48 hours following each parapet pour. Separate parapets poured on the same date shall be considered separate pours. Random cores will not be measured for payment.

The Engineer will mark additional locations for cores where, in the sole opinion of the Engineer, the quality of the slipformed parapet is suspect.

The Engineer or his representative will be responsible for evaluation the cores. Any cores showing voids of any size adjacent to the reinforcement bars, or showing voids not adjacent to reinforcement bars of 1/4 square inch (160 square millimeters) in area or more, or

showing signs of segregation, or showing signs of cracking shall be considered failures and the parapet section from which it was taken will be rejected. Parapets with less than 1 1/2 inches of concrete cover over the reinforcement shall be rejected.

Rejected parapet sections shall be removed and replaced for the full depth cross-section of the parapet except that concrete covers between 1 inch and 1½ inches may be open to remedial action subject to the approval of the Engineer. Such action could entail up to and including removal and replacement.

The minimum length of parapet removed and replaced shall be 3 ft (1 m). Additional cores may be required to determine the longitudinal extent of removal and replacement if it can not be determined and agreed upon by other means (i.e. visual, sounding, non-destructive testing, etc.).

Any parapet section with more than one half of its length rejected or with remaining segments less than 10 ft (3 m) in length shall be removed and replaced in its entirety.

If reinforcement bars are damaged during the removal and replacement, additional removal and replacement shall be done, as necessary, to ensure minimum splice length of replacement bars. Any damage to epoxy coating of bars shall be repaired according to Article 508.04.

All core holes will be filled with a non-shrink grout meeting the requirements of Section 1024.

Basis of Payment. When the contractor, at his/her option, constructs the parapet using slipforming methods, no adjustment in the quantities for Concrete Superstructures and Reinforcement Bars, Epoxy Coated to accommodate this option will be allowed. Compensation under the contract bid items for Concrete Superstructures and Reinforcement Bars, Epoxy Coated shall cover the cost of all work required for the construction of the parapet and any test section(s) required, and for any additional costs of work or materials associated with slipforming methods.

LIGHTWEIGHT CELLULAR CONCRETE FILL
Effective: November 11, 2001
Revised: April 1, 2016

General: This work consists of providing lightweight cellular concrete fill (LCCF) at the locations(s) and according to the dimensions shown in the contract plans.

Submittals: Within 45 calendar days prior to proposed installation, the Contractor shall submit the following:

(a) The name of the subcontractor providing and installing the light weight cellular fill. The Contractor shall present an organization chart including names, telephone numbers, current certifications and/ or titles, and roles and responsibilities of all those involved in the manufacturing and installation of the lightweight cellular fill.

(b) Manufacturer's specifications, catalog cuts, and other product data needed to demonstrate compliance with specified requirements. These shall include reports and test results from laboratories.

(c) The subcontractor installing the lightweight fill shall be certified in writing by the Manufacturer of the lightweight fill. The certified applicator shall be regularly engaged in the placement of lightweight fill of a similar nature including the completion of mass fills having a minimum of 13,000 cu yd (9,950 cu m) in the past five years.

(d) A description of the proposed installation procedure. The procedure shall address the following.

(1) Proposed construction sequence and schedule.

(2) Location of the equipment and batching areas.

(3) Type of equipment and tools to be used.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement	1001
(b) Fly Ash	1010
(c) Water	1002
(d) Fine Aggregate	1003
(e) Concrete Admixtures	1021
(f) Foaming Agent (Note 1)	

Note 1. The foaming agent shall be according to ASTM C 869, and shall be listed on the Department's Qualified Product List of Foaming Agents for Cellular Concrete. The manufacturer shall provide an infrared spectrophotometer trace no more than five years old. When the infrared spectrophotometer trace is more than seven years old, a new one shall be provided.

Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Concrete Mixers and Trucks	1103.01
(b) Batching and Weighing Equipment	1103.02
(c) Automatic and Semi-Automatic Batching Equipment	1103.03
(d) Water Supply Equipment	1103.11
(e) Mobile Portland Cement Concrete Plants	1103.04
(f) Foam Generator (Notes 1 & 3)	
(g) Mobile Site Batch Plant (Notes 2 & 3)	

Note 1. Foam generating equipment shall be calibrated daily to produce an accurate volume of foam.

Note 2. Mobile site batch plants shall be capable of mixing and pumping cellular concrete, and shall have a minimum 1 cu yd (0.76 cu m) capacity. Mobile site plants shall be calibrated before the start of the project, and then during the project as determined by the Engineer.

Note 3. Foam generators and mobile site batch plants shall be certified in writing by the manufacturer of the lightweight cellular concrete and approved by the Engineer.

Lightweight Cellular Concrete Classes. The four general classes of lightweight cellular concrete delineated by maximum as-cast density and minimum compressive strength are given in Table 1. If the class of lightweight cellular concrete is not specified in the contract, the class to use shall be as directed by the Engineer.

Table 1. CLASSES OF LIGHTWEIGHT CELLULAR CONCRETE

Class	Maximum Lift Height ft (m)	Maximum As-Cast Density lb/cu ft (kg/cu m)	Minimum Compressive Strength Psi (kPa) Days (Note 1)	
			7	28
I	4 (1.2)	30 ± 2 (481 ± 32)	30 (205)	40 (275)
II	4 (1.2)	36 ± 2 (577 ± 32)	60 (415)	80 (550)
III	2.5 (0.76)	42 ± 2 (673 ± 32)	90 (620)	120 (825)
IV	2.5 (0.76)	50 ± 2 (801 ± 32)	115 (795)	150 (1035)

Notes:
(1) When fly ash is used, the required 7-day and 28-day strengths may be reached at 14 and 56 days, respectively.

Other Lightweight Cellular Concrete Criteria. The lightweight cellular concrete shall be according to the following.

(a) Proportioning and Mix Design. For all Classes of lightweight cellular concrete, it shall be the Contractor's responsibility to determine the mix design material proportions and to proportion each batch. The Contractor shall provide the mix designs a minimum of 45 calendar days prior to production. The Engineer will verify the mix design submitted by the Contractor.

For a new mix design to be verified, the Engineer will require the Contractor to provide a trial batch at no cost to the Department. The trial batch shall be scheduled a minimum of 30 calendar days prior to anticipated use and shall be performed in the presence of the Engineer. A minimum of 1 cu yd (0.75 cu m) trial batch shall be produced and placed offsite. The trial batch shall be produced with the equipment, materials, and methods intended for construction. The trial batch will be evaluated and tested by the Contractor and Engineer via split samples for as-cast density and compressive strength according to the sampling and testing requirements specified herein. The lightweight cellular concrete will also be evaluated and tested by the Engineer according to Illinois Test Procedure 501, as applicable.

Verification of the mix design will include trial batch test results and other criteria as determined by the Engineer. The Contractor will be notified in writing of verification. Verification of a mix design shall in no manner be construed as acceptance of any mixture produced. Tests performed at the jobsite will determine if a mix design can meet specifications.

(b) Admixtures. Admixture use shall be according to Article 1020.05(b).

(c) Temperature. The air temperature at the time of placement and for 24 hours thereafter shall be a minimum of 35 °F (2 °C). The temperature of the lightweight cellular concrete at point of discharge shall be a minimum of 45 °F (7 °C) and a maximum of 95 °F (35 °C).

Curing. Curing may be required for applications with significant surface area exposed (least width dimension of minimum 80 ft (24 m)) to the elements if rapid drying conditions are expected during placement, as determined by the Engineer. When curing is required, each lift shall be cured with a method recommended by the manufacturer of the lightweight cellular concrete. If curing compound is used, it shall be compatible with other construction materials it may interact with, and shall not inhibit bond of subsequent lifts.

Quality Control Sampling and Testing by the Contractor. The Contractor shall sample and test the lightweight cellular concrete as follows:

(a) As-Cast Density. The first batch placed each day and every 2 hours thereafter shall be sampled and tested as described for "experimental density of the concrete after pumping" according to ASTM C 796, except the hose length shall be that used for jobsite placement. The as-cast density shall be the average of at least two tests.

If the average as-cast density is outside the specified tolerance from Table 1, the Contractor shall reject the batch or make an adjustment to the mix before placement. Adjustments to the mix shall be accomplished by either increasing or decreasing the foam only.

(b) Compressive Strength. First batch placed each day and every 200 cu yd (155 cu m) thereafter shall be sampled according to ASTM C 495, except that samples shall not be oven dried at any time before testing. The minimum number of batches sampled per day shall be two. Eight 3 in. x 6 in. (75 mm x 150 mm) cylindrical test specimens shall be molded from each sample.

A compressive strength test is defined as the average of four cylinder breaks. For each sample, tests shall be conducted at 7 and 28 days, except when the mix includes fly ash, in which case, the tests may be conducted at 14 and 56 days, respectively.

Quality Assurance Sampling and Testing by the Engineer. The Engineer will sample and test the lightweight cellular concrete for quality assurance on independent and split samples. An independent sample is a field sample obtained and tested by only one party. A split sample is one of two equal portions of a field sample, where two parties each receive one portion for testing. The Engineer may request the Contractor to obtain a split sample. Any failing strength test specimen shall be retained until permission is given by the Engineer for disposal. The results of all quality assurance tests by the Engineer will be made available to the Contractor. However, Contractor split sample test results shall be provided to the Engineer before Department test results are revealed. The Engineer's quality assurance independent sample and split sample testing for placement or acceptance will be as follows:

(a) As-Cast Density. One independent or split sample test for the first batch placed each day and as determined by the Engineer thereafter.

(b) Compressive Strength. One independent or split sample for the first batch placed each day and as determined by the Engineer thereafter.

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

Test Parameter	Acceptable Limits of Precision
Compressive Strength	5 psi (34.5 kPa)
Density	1 lb/cu ft (16 kg/cu m)

Action shall be taken when either the Engineer's or the Contractor's test results are not within specification limits for strength or density. Action may include, but is not limited to, the Contractor being required to replace or repair test equipment as determined by the Engineer.

Placed material that fails in compressive strength will be considered unacceptable.

Acceptance by the Engineer. Final acceptance will be based on the Standard Specifications and the following:

(a) Validation of Contractor quality control test results using split samples. Any quality control or quality assurance test determined to be flawed may be declared invalid only when reviewed and approved by the Engineer. The Engineer will declare a test result invalid only if it is proven that improper sampling or testing occurred. The test result is to be recorded and the reason for declaring the test invalid will be provided by the Engineer.

(b) Comparison of the Engineer's quality assurance test results with specification limits using samples independently obtained by the Engineer.

The Engineer may suspend mixture production, reject materials, or take other appropriate action if the Contractor does not control the quality of lightweight cellular concrete. The decision will be determined according to (a) or (b).

Installation. Prior to installation, the ground surface shall be cleared of organic top soils, debris, sharp objects, and trees. Tree stumps shall be either removed or cut to the level of the ground surface. All wheel tracks or ruts in excess of 3 in. (75 mm) in depth shall be graded smooth or otherwise filled with soil to provide a reasonable smooth surface.

If a geotechnical fabric for ground stabilization or geomembrane is specified in conjunction with the LCCF, it shall be furnished and installed as specified elsewhere in the Contract and shall be in place prior to placing the LCCF.

The lightweight cellular concrete fill shall be placed according to the approved installation procedures provided by the manufacturer.

There shall be no standing water in the area to be filled. If necessary, dewatering shall be continuous during the time the lightweight cellular concrete fill is constructed. Lightweight cellular concrete fill shall not be placed during or when periods of precipitation are expected unless placed in an enclosed, covered area and the ground water is diverted away from the LCCF.

If any items are to be encased in the fill, the items shall be set to the final location both horizontally and vertically prior to installation of the LCCF.

Mixing and placement of the LCCF shall be done as follows:

(a) After mixing, the materials shall be promptly placed in the final location.

(b) No mechanical vibration of the LCCF shall be permitted.

(c) The material shall be placed to prevent segregation. Intermediate lifts shall be placed horizontal while only the top lift shall be sloped to grade. The final surface elevation of the lightweight cellular concrete fill shall be within ±1.5 inches (±38 mm) of the plan elevation.

(d) Limit the area of placement to the volume that can be placed within 1 hour, up to the maximum lift height. Stagger placements such that the vertical joints are at least 10 ft (3 m) apart.

(e) The cellular concrete shall be placed with a hose. The discharge hose length shall not exceed 800 ft (244 m) in length. Discharge from the hose shall not be allowed to flow more than 30 ft (9 m) from where it is deposited to its final position.

(f) Heavy construction equipment or other unusual loading of the lightweight cellular concrete fill shall not be permitted.

(g) Construction activities on any recently placed lift will not be permitted until at least 12 hours has elapsed and a minimum compressive strength of 8 psi (55 kPa) has been achieved. However, if any work on the recently placed LCCF resulting in cracking or indentations of more than an 0.125 inch (3 mm), the contractor shall discontinue construction, revise their wait time, mix strength or equipment used and submit to the Engineer for approval.

(h) Sawing or ripping of the lightweight cellular concrete fill for utilities, drains or other conflicts will be by methods approved by the Engineer and lightweight cellular concrete fill Manufacturer.

Method of Measurement. Lightweight cellular fill shall be measure for payment in cubic yards (cubic meters) according to Article 202.07.

Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) for LIGHTWEIGHT CELLULAR CONCRETE FILL.

BRIDGE DECK CONSTRUCTION
Effective: October 22, 2013
Revised: December 21, 2016

When Diamond Grinding of Bridge Sections is specified, hand finishing of the deck surface shall be limited to areas not finished by the finishing machine and to address surface corrections according to Article 503.16(a)(2). Hand finishing shall be limited as previously stated solely for the purpose of facilitating a more timely application of the curing protection. In addition the requirements of 503.16(a)(3)a. and 503.16(a)(4) will be waived.

Revise the Second Paragraph of Article 503.06(b) to read as follows.

"When the Contractor uses cantilever forming brackets on exterior beams or girders, additional requirements shall be as follows."

Revise Article 503.06(b)(1) to read as follows.

"(1) Bracket Placement. The spacing of brackets shall be per the manufacturer's published design specifications for the size of the overhang and the construction loads anticipated. The resulting force of the leg brace of the cantilever bracket shall bear on the web within 6 inches (150 mm) of the bottom flange of the beam or girder."

Revise Article 503.06(b)(2) to read as follows.

"(2) Beam Ties. The top flange of exterior steel beams or girders supporting the cantilever forming brackets shall be tied to the bottom flange of the next interior beam. The top flange of exterior concrete beams supporting the cantilever forming brackets shall be tied to the top flange of the next interior beam. The ties shall be spaced at 4 ft (1.2 m) centers. Permanent cross frames on steel girders may be considered a tie. Ties shall be a minimum of 1/2 inch (13 mm) diameter threaded rod with an adjusting mechanism for drawing the tie taut. The ties shall utilize hanger brackets or clips which hook onto the flange of steel beams. No welding will be permitted to the structural steel or stud shear connectors, or to reinforcement bars of concrete beams, for the installation of the tie bar system. After installation of the ties and blocking, the tie shall be drawn taut until the tie does not vary from a straight line from beam to beam. The tie system shall be approved by the Engineer."

Revise Article 503.06(b)(3) to read as follows.

"(3) Beam Blocks. Suitable beam blocks of 4 in x 4 in (100 x 100 mm) timbers or metal structural shapes of equivalent strength or better, acceptable to the Engineer, shall be wedged between the webs of the two beams tied together, within 6 inches (150 mm) of the bottom flange at each location where they are tied. When it is not feasible to have

the resulting force from the leg brace of the cantilever brackets transmitted to the web within 6 inches (150 mm) of the bottom flange, then additional blocking shall be placed at each bracket to transmit the resulting force to within 6 inches (150 mm) of the bottom flange of the next interior beam or girder."

Delete the last paragraph of Article 503.06(b).

ERECTION OF BRIDGE GIRDERS OVER OR ADJACENT TO RAILROADS
Effective: August 9, 2019

Description: In addition to the requirements of Article 504.06(d) and 505.08(e), the following shall apply.

The Contractor or sub-Contractor performing the erection of steel or concrete beams or girders over, or adjacent to (within 25 ft. of), active railroad tracks shall submit an erection plan to the Engineer for approval prior to starting the work.

Erection Plan: The Erection Contractor shall retain the services of an Illinois Licensed Structural Engineer for the completion of a project-specific erection plan. The structural engineer, herein referred to as the Erection Engineer, shall sign and seal the erection plan, drawings, and calculations for the proposed erection of the structural beams or girders.

The erection plan shall be complete in detail for all phases, stages, and conditions anticipated during erection. The erection plan shall include structural calculations and supporting documentation necessary to completely describe and document the means, methods, temporary support positions, and loads necessary to safely erect the structural members in conformance with the contract documents and as outlined herein. The erection plans shall address and account for all items pertinent to the erection including such items as sequencing, falsework, temporary shoring and/or bracing, girder stability, crane positioning and movement, means of access, pick points, girder shape, permissible deformations and roll, interim/final plumbness, cross frame/diaphragm placement and connections, bolting and anchor bolt installation sequences and procedures, and blocking and anchoring of bearings. The Erection Contractor shall be responsible for the stability of the partially erected structure during all phases of erection.

The erection plans and procedures shall be submitted to the Engineer for review and acceptance prior to starting the work. Review, acceptance and/or comments by the Department shall not be construed to guarantee the safety or final acceptability of the work or compliance with all applicable specifications, codes, or contract requirements, and shall neither relieve the Contractor of the responsibility and liability to comply with these requirements, nor create liability for the Department. Significant changes to the erection plan in the field must be approved by the Erection Engineer and accepted by the Engineer for the Department.

Basis of Payment: This work shall not be paid for separately but shall be included in the applicable pay items according to Article 504.08 or 505.13 of the Standard Specifications.

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	Brush College Road	Marked Rte.	FAU 7448 (Brush College Road)
Section	09-00933-01-BR	Project No.	3ELT (222)
County	Macon	Contract No.	

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issued by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Virginia Flynn	Virginia Flynn
Print Name	Signature
Senior Environmental Scientist	11/5/2020
Title	Date
Kaskaskia Engineering Group, LLC	
Agency	

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

I. Site Description:

A. Provide a description of the project location (include latitude and longitude, Section, Town, and Range):

Decatur, Illinois. Latitude: 39.863346 N, Longitude: -88.898179 W, Section 8, T16N, R3E.

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

The proposed overpass of Brush College Road at Faries Parkway consists of a 2-span bridge with retaining walls for along the bridge approaches. The bridge will carry two 12'-lanes in each direction and a shared-use path along the east side. A ramp located in the south-east quadrant of the intersection (called a "jug handle") will provide a connection between the two grade separated roadways.

Faries Parkway will also be widened in this area to provide two 12' lanes in each direction, along with an 8' shared use path. The constraint of the NSRR located parallel to and north of Faries Parkway requires the north edge of the roadway to be maintained and the widening to occur on the south side.

Stormwater runoff within the project limits will be collected through a combination of ditches and storm sewers. Along the east leg of Faries Parkway, stormwater run-off will flow into a combination of storm sewers and a roadside vegetated ditches before entering and into an intermittent stream south of the roadway. The intermittent stream is considered a Water of the U.S. (WOUS).

An existing culvert at station 176+15 connects the stormwater discharge north of Faries Parkway with the intermittent stream. Due to the widening of Faries Parkway to the south, the existing culvert will need to be extended. The intermittent stream will need to be partially re-aligned to tie in with the extended culvert.

Construction will consist of three pre-construction stages and five construction stages.
- All tempporary sediment and erosion control devices will be functional before the project site is otherwise disturbed.
- All vegetative and structural erosion and sediment control practices will be constructed according to IDOT Standard Specifications for road and bridge construction and the Illinois Urban Manual, Latest Editions.

Inspections will be conducted every seven calendar days and after a storm event of 1/2 inch of rain or equivelent snowfall.
- All temporary erosion control BMPs will be maintained in effective operating condition.
- Permanent erosion control measures will be implemented after contruction in an are is complete and will be maintained until 70% perennial vegetative cover or equivalent permanent stabilization is achieved.
- Temporary erosion control measures will be removed once permanent measures are implemented and fully established.

C. Provide the estimated duration of this project:

27 months

D. The total area of the construction site is estimated to be 24.64 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 24.64 acres.

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

Existing Runoff Coefficient before construction: 0.69
Proposed Runoff Coefficient after construction activities are completed: 0.70

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

Map Unit Symbol	Map Unit Name	Erosion Rating
152A	Drummer silty clay loam, 0-2 percent slopes	Slight
154A	Flanagan silt loam, 0-2 percent slopes	Slight
171B	Catlin silt loam, 2-5 percent slopes	Moderate
233B	Birkbeck silt loam, 2-5 percent slopes	Moderate
322C2	Russel silt loam, Bloomington Ridges Plain, 5-10 percent slopes, eroded	Severe
533	Urban Land	Not Rated
802B	Orthents, loamy undulating	Moderate

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

N/A

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

Severly erosive areas of the project area are along E. Faries Parkway approx. 1000 feet east of Brush College Rd.

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

Stage 1: South Portion of Brush College Road and retaining wall, new James St. connection, new cemetery access road - Catlin silt loam, 2-5 percent slopes (171B), Russell silt loam, Bloomington Ridges Plain, 5-10 percent slopes, Drummer silty clay loam, 0-2 percent slopes, Orthents, loamy undulating (802B), Flanagan silt loam, 0-2 percent slopes, and Urban Land.

Stage 2: Portion of Brush College Road Adjacent to Harrison Construction, E. Harrison IC RR At-Grade Crossing Signal, E. Harrison St. (West Leg), new roadway connection, Logan St., Jug Handle connector road, E. Half of Brush College Road S. of the Jug Handle connector road, retaining walls - Catlin silt loam, 2 to 5 percent slopes, Flanagan silt loam, 0 to 2 percent slopes, Drummer silty clay loam, 0 to 2 percent slopes, Urban Land.

Stage 3: West half of Brush Colleg Road, N. of E. Harrison St. (East Leg), S. Half of Faries Pkwy Rdwy, Retaining Walls, North and South Bridge Abutments, Center Bridge PIer along Faries Pkwy, S. Half of E. Harrison Rd. (East Leg) - Russell silt loam, Bloomington Ridged Plain, 5 to 10 percent slopes, eroded, Flanagan silt loam, 0 to 2 percent slopes, Catlin silt loam, 2 to 5 percent slopes, Drummer silty clay loam, 0 to 2 percent slopes, Urban Land.

Stage 4: Center lane of Faries Pkwy near E. project limits, traffic signals for new Faries Pkwy and Jug Handle connector, resurface E. Harrison Rd. (East Leg), east of reconstruction limits, N. half of E. Harrison Rd (East Leg), E. Half of Brush College Rd. N. of E. Harrison St. (East Leg), N. Half of Faires Pkwy Rdwy, retaining walls, N. and S. Bridge abutments, Faries at IC RR At-Grade Crossing Signal Equip - Flanagan silt loam, 0 to 2 percent slopes, Catlin silt loam, 2 to 5 percent slopes, Drummer silty clay loam, 0 to 2 percent slopes, Russell silt loam, Bloomington Ridged Plain, 5 to 10 percent slopes, eroded, Urban Land.

Stage 5: Roadway lighting for Brush Colleg Rd., traffic signal for New Brush College Rd and Jug Handle connector, remaining Brush College Rd. south, Faries Pkwy Median West of IC RR Tracks, retaining walls, Brush College Road Bridge structure and abutments - Flanagan silt loam, 0 to 2 percent slopes, Catlin silt loam, 2 to 5 percent slopes, Drummer silty clay loam, 0 to 2 percent slopes, Urban Land.

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

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

City of Decatur Public Works

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

Decatur, Decatur Township, Macon County

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

Receiving water on site: UNT to Lake Decatur. Ultimate receiving water off site: Lake Decatur.

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

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

Slopes of 1:3 or steeper, areas near streams (Unnamed Tributary to Lake Decatur), and areas with highly erodible soils will be protected with erosion control blankets or riprap, where applicable.

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

☐ 303(d) Listed receiving waters for suspended solids, turbidity, or siltation

The name(s) of the listed water body, and identification of all pollutants causing impairment:

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

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

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

☐ Applicable Federal, Tribal, State or Local Programs

☐ Floodplain

☐ Historic Preservation

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

TMDL (fill out this section if checked above)

The name(s) of the listed water body:

Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

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

☒ Other
Concrete, curing compounds, concrete truck waste, solid waste, oil and grease, solvents, trash and debris, waste water from cleaning construction equipment.

☐ Wetland

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

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

II. Controls:

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

A. **Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed and maintained to:

1. Minimize the amount of soil exposed during construction activity;
2. Minimize the disturbance of steep slopes;
3. Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible;
4. Minimize soil compaction and, unless infeasible, preserve topsoil.

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

1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.
2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

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

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

The following stabilization practices will be used during all phases of construction.

- IDOT's Preservation and Replacment of Trees (D&E-18) will be followed throughout all phases of construction.
- Inlet and pipe protection and inlet filters: protection of existing and new stormwater inlets and pipes from runoff and sediment.
- Temporary erosion control seeding and temporary mulch: temporary stabilization of disturbed soil on low gradient slopes and roadsides.
- Permanent erosion control seeding and mulch: permanent stablization of distrubed soil on low gradient slopes and roadsides.
- Erosion Control Blanket (ECB): temporary and permanent stabilization of steep slopes (1:3), channels, and exposed soil.
- Heavy Duty ECB: temporary and permanent stabilization of steep slopes (1:2) and low flow channels.

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

Temporary stabilization practices will remain in place until all constuction activities are complete, permanent stabilization measures are in place, and permanent vegetation is established at 70% cover of perennials.

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

The following structural practices will be used for this project:

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

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

The following structural practices will be used during all phases of construction.

- Inlet and pipe protection and inlet filters: protection of existing and new stormwater inlets and pipes from runoff and sediment.Temporary Ditch Checks: Slow runoff in roadside ditches.
- Perimeter Erosion Barrier: Reduce sediment movement off-site and down steep slopes.
- Turf Reinforcement Mat: Concentrated flow areas along roadsides.
- Stone Riprap, Class A3: Culverts inlets/outlets, stormwater outlets, concentrated flow areas.
- Stone Riprap, Class A4: Permanent stabilization of steep slopes.

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

Temporary stabilization practices will remain in place until all constuction activities are complete, permanent stabilization measures are in place, and permanent vegetation is established at 70% cover of perennials. Permanent structural practices will be left in place for stabilization (riprap, final seeding, turf reinforcement mats).

D. **Treatment Chemicals**

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

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

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

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

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

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

   Description of permanent storm water management controls:

   Velocity dissipation (riprap pads) will be provided at culvert outlets according to IDOT Standards and Specifications.

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

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

G. **Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342a.

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:

   - Approximate duration of the project, including each stage of the project
   - Rainy season, dry season, and winter shutdown dates
   - Temporary stabilization measures to be employed by contract phases
   - Mobilization timeframe
   - Mass clearing and grubbing/roadside clearing dates
   - Deployment of Erosion Control Practices
   - Deployment of Sediment Control Practices (including stabilized construction entrances/exits)
   - Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
   - Paving, saw-cutting, and any other pavement related operations
   - Major planned stockpiling operations
   - Timeframe for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
   - Permanent stabilization activities for each area of the project

2. During the pre-construction meeting, the Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:

   - Temporary Ditch Checks - Identify what type and the source of Temporary Ditch Checks that will be installed as part of the project. The installation details will then be included with the SWPPP.
   - Vehicle Entrances and Exits – Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
   - Material Delivery, Storage and Use – Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
   - Stockpile Management – Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
   - Waste Disposal – Discuss methods of waste disposal that will be used for this project.
   - Spill Prevention and Control – Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
   - Concrete Residuals and Washout Wastes – Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
   - Litter Management – Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
   - Vehicle and Equipment Fueling – Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
   - Vehicle and Equipment Cleaning and Maintenance – Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
   - Dewatering Activities – Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
   - Polymer Flocculants and Treatment Chemicals – Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
   - Additional measures indicated in the plan.

III. Maintenance:

When requested by the Contractor, the Resident Engineer will provide general maintenance guides (e.g., IDOT Erosion and Sediment Control Field Guide) to the Contractor for the practices associated with this project. Describe how all items will be checked for structural integrity, sediment accumulation and functionality. Any damage or undermining shall be repaired immediately. Provide specifics on how repairs will be made. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures

and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

IV. Inspections:

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

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

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

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, Illinois 62794-9276

V. Failure to Comply:

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.

Illinois Department of Transportation

Contractor Certification Statement

Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Section II.G of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractor/subcontractor completing this form.

Route	FAU 7448	Marked Rte.	Brush College Road
Section	09-00933-01-BR	Project No.	3ELT (222)
County	Macon	Contract No.	

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR 10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

☐ Contractor

☐ Sub-Contractor

Print Name	Signature
Title	Date
Name of Firm	Telephone
Street Address	City/State/ZIP

Items which this Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP:

BDE 2342a
Construction Schedule
Location and Type of BMPs