

205

April 27, 2018 Letting

Notice to Bidders, Specifications and Proposal



**Illinois Department
of Transportation**

Springfield, Illinois 62764

**Contract No. 91562
VERMILION County
Section 15-00033-02-PV (Tilton)
Route FAP 332 (II 1)
District 5 Construction Funds**

Prepared by

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Checked by

(Printed by authority of the State of Illinois)



NOTICE TO BIDDERS

- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 10:00 a.m. April 27, 2018 prevailing time at which time the bids will be publicly opened from the iCX SecureVault.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 91562
VERMILION County
Section 15-00033-02-PV (Tilton)
Route FAP 332 (Il 1)
District 5 Construction Funds**

Reconstruction on IL 1 from 14th Street and Southgate Drive in the Village of Tilton to include pavement widening, curb and gutter replacement, resurfacing, raised median, roadway lighting and traffic signals.

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

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

By Order of the
Illinois Department of Transportation

Randall S. Blankenhorn,
Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2018

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 1-1-18)

SUPPLEMENTAL SPECIFICATIONS

<u>Std. Spec. Sec.</u>		<u>Page No.</u>
106	Control of Materials.....	1
403	Bituminous Surface Treatment (Class A-1, A-2, A-3)	2
404	Micro-Surfacing and Slurry Sealing	3
405	Cape Seal	14
420	Portland Cement Concrete Pavement	24
442	Pavement Patching.....	26
502	Excavation for Structures.....	27
503	Concrete Structures.....	29
504	Precast Concrete Structures.....	32
542	Pipe Culverts.....	33
586	Sand Backfill for Vaulted Abutments	34
630	Steel Plate Beam Guardrail	36
631	Traffic Barrier Terminals	39
670	Engineer's Field Office and Laboratory	40
701	Work Zone Traffic Control and Protection	41
704	Temporary Concrete Barrier	42
781	Raised Reflective Pavement Markers	44
888	Pedestrian Push-Button.....	45
1003	Fine Aggregates	46
1004	Coarse Aggregates.....	47
1006	Metals	50
1020	Portland Cement Concrete	51
1050	Poured Joint Sealers	53
1069	Pole and Tower.....	55
1077	Post and Foundation.....	56
1096	Pavement Markers.....	57
1101	General Equipment.....	58
1102	Hot-Mix Asphalt Equipment.....	59
1103	Portland Cement Concrete Equipment.....	61
1106	Work Zone Traffic Control Devices.....	63

CHECK SHEET
FOR
RECURRING SPECIAL PROVISIONS

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

RECURRING SPECIAL PROVISIONS

CHECK SHEET #		<u>PAGE NO.</u>
1	Additional State Requirements for Federal-Aid Construction Contracts	64
2	Subletting of Contracts (Federal-Aid Contracts)	67
3	X EEO	68
4	X Specific EEO Responsibilities Non Federal-Aid Contracts	78
5	X Required Provisions - State Contracts	83
6	Asbestos Bearing Pad Removal	89
7	Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal	90
8	Temporary Stream Crossings and In-Stream Work Pads	91
9	Construction Layout Stakes Except for Bridges	92
10	Construction Layout Stakes	95
11	Use of Geotextile Fabric for Railroad Crossing	98
12	Subsealing of Concrete Pavements	100
13	Hot-Mix Asphalt Surface Correction	104
14	Pavement and Shoulder Resurfacing	106
15	Patching with Hot-Mix Asphalt Overlay Removal	107
16	Polymer Concrete	109
17	PVC Pipeliner	111
18	Bicycle Racks	112
19	Temporary Portable Bridge Traffic Signals	114
20	Work Zone Public Information Signs	116
21	X Nighttime Inspection of Roadway Lighting	117
22	English Substitution of Metric Bolts	118
23	Calcium Chloride Accelerator for Portland Cement Concrete	119
24	Quality Control of Concrete Mixtures at the Plant	120
25	Quality Control/Quality Assurance of Concrete Mixtures	128
26	Digital Terrain Modeling for Earthwork Calculations	144
27	Reserved	146
28	Preventive Maintenance – Bituminous Surface Treatment (A-1)	147
29	Reserved	153
30	Reserved	154
31	Reserved	155
32	Temporary Raised Pavement Markers	156
33	Restoring Bridge Approach Pavements Using High-Density Foam	157
34	Portland Cement Concrete Inlay or Overlay	160
35	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	164

CHECK SHEET
FOR
LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

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

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

<u>CHECK SHEET #</u>	<u>PAGE NO.</u>
LRS 1 Reserved	168
LRS 2 <input type="checkbox"/> Furnished Excavation	169
LRS 3 <input type="checkbox"/> Work Zone Traffic Control Surveillance	170
LRS 4 <input type="checkbox"/> Flaggers in Work Zones	171
LRS 5 <input type="checkbox"/> Contract Claims	172
LRS 6 <input type="checkbox"/> Bidding Requirements and Conditions for Contract Proposals	173
LRS 7 <input type="checkbox"/> Bidding Requirements and Conditions for Material Proposals	179
LRS 8 Reserved	185
LRS 9 <input type="checkbox"/> Bituminous Surface Treatments	186
LRS 10 Reserved	187
LRS 11 <input type="checkbox"/> Employment Practices	188
LRS 12 <input type="checkbox"/> Wages of Employees on Public Works	190
LRS 13 <input type="checkbox"/> Selection of Labor	192
LRS 14 <input type="checkbox"/> Paving Brick and Concrete Paver Pavements and Sidewalks	193
LRS 15 <input type="checkbox"/> Partial Payments	196
LRS 16 <input type="checkbox"/> Protests on Local Lettings	197
LRS 17 <input type="checkbox"/> Substance Abuse Prevention Program.....	198
LRS 18 <input type="checkbox"/> Multigrade Cold Mix Asphalt	199

SPECIAL PROVISIONS TABLE OF CONTENTS

LOCATION OF PROJECT	1
PROJECT DESCRIPTION.....	1
COMPLETION DATE	1
TRAFFIC CONTROL PLAN.....	1
EARTH EXCAVATION	2
REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES.....	2
TOPSOIL EXCAVATION AND PLACEMENT	5
REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	5
FINAL SHAPING, TRIMMING AND FINISHING	5
SODDING	6
SUPPLEMENTAL WATERING	6
HOT-MIX ASPHALT – REQUIRED FIELD TESTS	6
HOT-MIX ASPHALT – INDIVIDUAL DENSITY SITES	7
HOT-MIX ASPHALT MIXTURE IL-9.5FG	8
LONGITUDINAL JOINT DENSITY (D5-FG).....	13
NON-VERTICAL IMPACT ROLLER FOR HOT-MIX ASPHALT	14
PORTLAND CEMENT CONCRETE BASE COURSE (VARIABLE DEPTH)	14
PORTLAND CEMENT CONCRETE PAVEMENT 8” (JOINTED)	15
PAVEMENT REMOVAL	15
CONCRETE REINFORCEMENT BARS, TIE BARS, DOWEL BARS AND DOWEL BAR ASSEMBLY	15
WATER VALVES TO BE ADJUSTED	15
CONTROLLED LOW STRENGTH MATERIAL	16
COMBINATION CURB AND GUTTER, TYPE B-6.24, TYPE B-6.18, TYPE B-6.12	16
COMBINATION CURB AND GUTTER, TYPE B-6.24 (ABUTTING EXISTING PAVMENT)	16
IMPACT ATTENUATORS, RELOCATE (NON-DIRECTIVE), TEST LEVEL 2.....	17
REMOVE CONCRETE FOUNDATION – GROUND MOUNT	17
CONCRETE BARRIER REMOVAL (SPECIAL).....	18
CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL).....	18
GAS VALVES TO BE ADJUSTED	18
UNDERGROUND CONDUIT, PVC 2” DIA.	19
UNDERGROUND CONDUIT, PVC 2 ½” DIA.	19
UNDERGROUND CONDUIT, PVC 3” DIA.	19
UNDERGROUND CONDUIT, PVC 4” DIA.	19
HANDHOLE, PORTLAND CEMENT CONCRETE, DOUBLE	19
HANDHOLE, PORTLAND CEMENT CONCRETE.....	19
GULFBOX JUNCTION REMOVAL	20
FULL-ACTUATED CONTROLLER AND TYPE IV CABINET	20

UNINTERRUPTABLE POWER SUPPLY, STANDARD 22
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C, 22
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C, 22
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C, 22
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C 22
ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C 23
TRAFFIC SIGNAL POST, ALUMINUM 10 FT..... 24
TRAFFIC SIGNAL POST, ALUMINUM 14 FT..... 24
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 48 FT..... 24
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 50 FT..... 24
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 58 FT..... 24
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 36 FT. (SPECIAL)..... 24
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 46 FT. (SPECIAL)..... 24
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 54 FT. (SPECIAL)..... 24
CONCRETE FOUNDATION, TYPE A 25
CONCRETE FOUNDATION, TYPE C..... 25
CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER 26
CONCRETE FOUNDATION, TYPE E, 42-INCH DIAMETER 26
DRILL EXISTING HANDHOLE 26
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED..... 27
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 4-SECTION, BRACKET MOUNTED 27
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 4-SECTION, MAST ARM MOUNTED..... 27
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED..... 27
SIGNAL HEAD, POLYCARBONATE, LED, 2-FACE, 1-3-SECTION, 1-4-SECTION, BRACKET
MOUNTED..... 27
SIGNAL HEAD, POLYCARBONATE, LED, 2-FACE, 1-4-SECTION, 1-5-SECTION, BRACKET
MOUNTED..... 27
PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, BRACKET MOUNTED WITH
COUNTDOWN TIMER 28
PEDESTRIAN PUSH-BUTTON 28
RELOCATE EXISTING SIGNAL HEAD..... 29
RELOCATE EXISTING TRAFFIC SIGNAL POST..... 29
REMOVE EXISTING CONCRETE FOUNDATION 29
MODIFY EXISTING SERVICE INSTALLATION..... 30
WIDE AREA VIDEO DETECTION SYSTEM COMPLETE..... 31
LED INTERNALLY ILLUMINATED STREET NAME SIGN 32
FIBER OPTIC CABLE IN CONDUIT, 12 FIBERS, SINGLE MODE 32
SERVICE INSTALLATION, TYPE A (MODIFIED) 33
HANDHOLE TO BE ADJUSTED..... 34
CONTROLLER CABINET TYPE IV, SPECIAL..... 35
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT, SPECIAL 36
ROADWAY LIGHTING COORDINATION 37

GULFBOX JUNCTION, COMPOSITE CONCRETE.....	37
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10.....	37
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 6.....	37
LUMINAIRE, LED, SPECIAL	38
LUMINAIRE INSTALLATION, TYPE 1	38
LUMINAIRE INSTALLATION, TYPE 2	39
REMOVAL OF LIGHTING UNIT, SALVAGE	39
REMOVAL OF POLE FOUNDATION.....	40
RELOCATE EXISTING LIGHTING UNIT.....	40
REMOVAL OF LIGHTING LUMINAIRE, SALVAGE.....	41
JUNCTION BOX (SPECIAL).....	41
LIGHT POLE FOUNDATION, SPECIAL	42
STATUS OF UTILITY SHEETS	43
LR 107-4.....	45

BDE SPECIAL PROVISIONS

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

<u>File Name</u>	<u>Pg.</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80099		Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2014
80382	46	X Adjusting Frames and Grates	April 1, 2017	
80274		Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
80192		Automated Flagger Assistance Device	Jan. 1, 2008	
80173		Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80241		Bridge Demolition Debris	July 1, 2009	
50261		Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50481		Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50491		Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50531		Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
80366	48	X Butt Joints	July 1, 2016	
80386		Calcium Aluminate Cement for Class PP-5 Concrete Patching	Nov. 1, 2017	
80396		Class A and B Patching	Jan. 1, 2018	
80384	49	X Compensable Delay Costs	June 2, 2017	
80198		Completion Date (via calendar days)	April 1, 2008	
80199		Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80293		Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
80311		Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
80277	53	X Concrete Mix Design – Department Provided	Jan. 1, 2012	April 1, 2016
80261		Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
80387		Contrast Preformed Plastic Pavement Marking	Nov. 1, 2017	
* 80029	54	X Disadvantaged Business Enterprise Participation	Sept. 1, 2000	April 2, 2018
80378	65	X Dowel Bar Inserter	Jan. 1, 2017	Jan. 1, 2018
80388	72	X Equipment Parking and Storage	Nov. 1, 2017	
80229		Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
80304		Grooving for Recessed Pavement Markings	Nov. 1, 2012	Nov. 1, 2017
80246		Hot-Mix Asphalt – Density Testing of Longitudinal Joints	Jan. 1, 2010	April 1, 2016
80347		Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits - Jobsite Sampling	Nov. 1, 2014	Jan. 1, 2018
80383		Hot-Mix Asphalt – Quality Control for Performance	April 1, 2017	Nov. 1, 2017
80376	73	X Hot-Mix Asphalt – Tack Coat	Nov. 1, 2016	
80392	74	X Lights on Barricades	Jan. 1, 2018	
80336		Longitudinal Joint and Crack Patching	April 1, 2014	April 1, 2016
* 80393		Manholes, Valve Vaults, and Flat Slab Tops	Jan. 1, 2018	March 2, 2018
80045		Material Transfer Device	June 15, 1999	Aug. 1, 2014
* 80394		Metal Flared End Section for Pipe Culverts	Jan. 1, 2018	April 1, 2018
80165		Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
80349		Pavement Marking Blackout Tape	Nov. 1, 2014	April 1, 2016
80371	76	X Pavement Marking Removal	July 1, 2016	
80390	77	X Payments to Subcontractors	Nov. 2, 2017	
80377	78	X Portable Changeable Message Signs	Nov. 1, 2016	April 1, 2017
80389	79	X Portland Cement Concrete	Nov. 1, 2017	
80359		Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Nov. 1, 2017
80385	80	X Portland Cement Concrete Sidewalk	Aug. 1, 2017	
80300		Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
80328	81	X Progress Payments	Nov. 2, 2013	
34261		Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
80157		Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	

<u>File Name</u>	<u>Pg.</u>		<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80306	82	X	Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 1, 2018
80395			Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
80340			Speed Display Trailer	April 2, 2014	Jan. 1, 2017
80127			Steel Cost Adjustment	April 2, 2014	Aug. 1, 2017
* 80397	92	X	Subcontractor and DBE Payment Reporting	April 2, 2018	
80391	93	X	Subcontractor Mobilization Payments	Nov. 2, 2017	
80317			Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	April 1, 2016
80298			Temporary Pavement Marking (NOTE: This special provision was previously named "Pavement Marking Tape Type IV".)	April 1, 2012	April 1, 2017
20338			Training Special Provision	Oct. 15, 1975	
80318			Traversable Pipe Grate for Concrete End Sections (Note: This special provision was previously named "Traversable Pipe Grate".)	Jan. 1, 2013	Jan. 1, 2018
80288	94	X	Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
80302	96	X	Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
80071			Working Days	Jan. 1, 2002	

The following special provisions are in the 2018 Supplemental Specifications and Recurring Special Provisions.

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
80368	Light Tower	Article 1069.08	July 1, 2016	
80369	Mast Arm Assembly and Pole	Article 1077.03(a)(1)	July 1, 2016	
80338	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	Recurring CS #35	April 1, 2014	April 1, 2016
80379	Steel Plate Beam Guardrail	Articles 630.02, 630.05, 630.06, and 630.08	Jan. 1, 2017	
80381	Traffic Barrier Terminal, Type 1 Special	Article 631.04	Jan. 1, 2017	
80380	Tubular Markers	Articles 701.03, 701.15, 701.18, and 1106.02	Jan. 1, 2017	

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 on Uniform Traffic Control Devices for Streets and Highways,” and the “Manual of Test Procedures for Materials” in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply and govern the construction of Tilton Corridor Improvements (Section 15-00033-02-PV) and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

The project is located along Illinois Route 1 between 14th Street and Southgate Drive to the North and South and between 1st Avenue and Lane Street to the East and West in the Village of Tilton, IL.

PROJECT DESCRIPTION

The proposed improvements along Illinois Route 1 include widening the roadway, replacing curb and gutter, overlaying the existing pavement, replacing existing barrier wall with raised median, new roadway lighting and traffic signals. The proposed improvements along Southgate Drive, 16th Street, Ramp Road, 1st Avenue, and Lane Street include new PCC pavement, curb and gutter, storm sewers, and sidewalks.

COMPLETION DATE

It is the intent of IDOT that all work will be completed before October 31, 2018.

TRAFFIC CONTROL PLAN

Description: This work shall consist of furnishing all labor, material, transportation, and equipment necessary to provide and maintain traffic control in accordance with applicable portions of the Standard Specifications for Road and Bridge Construction, applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these Special Provisions, plan details, Highway Standards, Traffic Control Plans, Construction Staging Plans, and as directed by the Engineer.

General: Special attention is called to Articles 107.09 and 107.14 and Sections 701 through 705 of the Standard Specifications for Road and Bridge Construction and the traffic control related Highway Standards shown in the plans; Supplemental Specifications and Recurring Special Provisions, BDE Special Provisions; and other Special Provisions relating to Traffic Control.

The contractor shall be responsible for the traffic control devices at all times during construction activities, and shall coordinate the items of work to keep traffic hazards and/or inconveniences to a minimum.

All advance warning signs shall be in new or like new condition at the start of the project. If an advanced warning sign is damaged or becomes unreadable, the sign shall be replaced by a new or like new sign.

All signing for traffic control shall meet current IDOT policy for retro-reflectivity requirements.

Standards 701006, 701101, 701301, 701311, 701411, 701422, 701427, 701502, 701801, 701901, and District 5 702000 shall be used for roadway construction.

Any existing markings that conflict with the staged traffic markings shall be blacked out. Cost of blacking out existing markings and for the placement and removal of short-term markings shall be included in TRAFFIC CONTROL AND PROTECTION (SPECIAL).

Changeable Message Signs shall be placed 14 calendar days prior to the start of construction as directed by the Engineer to provide advanced warning of construction activities.

The contractor shall provide a name and phone number of a contact on a 24-hour basis in the event of an accident or other unforeseen damage occurs that necessitates replacement or resetting of traffic control items.

Basis of Payment: All traffic control and protection standard, in addition to those standards listed above, as shown on the plans and described in these specifications shall not be measured and paid for separately, but shall be included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL), which work shall include furnishing, installing, maintaining, replacing, relocating and removing all traffic control devices used for the purpose of regulating, warning, directing, closing, and detouring traffic on the local streets impacted by the construction of the project.

CHANGEABLE MESSAGE SIGNS shall be paid for at the contract unit price per calendar month.

EARTH EXCAVATION

Description: EARTH EXCAVATION shall be in accordance with Section 202 of the Standard Specifications for Road and Bridge Construction, except as noted herein.

Method of Measurement: EARTH EXCAVATION shall be measured for payment according to Article 202.0 of the Standard Specifications for Road and Bridge Construction.

Basis of Payment: This work shall be paid for in accordance with Section 202 of the Standard Specifications for Road and Bridge Construction, except revise Article 202.08 paragraph 4 to read:

“Removal and disposal of unstable and/or unsuitable material shall be considered incidental to the work, and shall not be paid for.”

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES

The work shall be according to Article 669 of the Standard Specifications and the following:

Qualifications. The term environmental firm shall mean an environmental firm with at least five (5) documented leaking underground storage tank (LUST) cleanups or that is pre-qualified in hazardous waste by the Department. Documentation includes but not limited to verifying remediation and special waste operations for sites contaminated with gasoline, diesel, or waste oil in accordance with all Federal, State, or local regulatory requirements and shall be provided to the Engineer for approval. The environmental firm selected shall not be a former or current consultant or have any ties with any of the properties contained within and/or adjacent to this construction project.

General. This Special Provision will likely require the Contractor to subcontract for the execution of certain activities.

All contaminated materials shall be managed as either “uncontaminated soil” or non-special waste. This work shall include monitoring and potential sampling, analytical testing, and management of a material contaminated by regulated substances. The Environmental Firm shall continuously monitor all soil excavation for worker protection and soil contamination. **Phase I Preliminary Engineering information is available through the District’s Environmental Studies Unit.** Soil samples or analysis without the approval of the Engineer will be at no additional cost to the Department. The lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit whichever is less.

The Contractor shall manage any excavated soils and sediment within the following areas:

ISGS Site #3192-13 (IDOT ROW)

- Station 3040+07 to Station 3041+69 (US 150), 0 to 90 feet RT (IDOT ROW, PESA Site 3192-13, 1400 block of Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(2). COC sampling parameter: manganese.

ISGS Site 3192-18 (Dollar General)

- Station 3034+72 to Station 3036+36 (US 150), 0 to 65 feet LT (Dollar General, PESA Site 3192-18, 1520 Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(2). COC sampling parameter: manganese.

ISGS Site 3192-19 (Vacant Land)

- Station 3037+77 to Station 3038+23 (US 150), 80 to 135 feet RT (Vacant Land, PESA Site 3192-19, 1500 block of Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(3). COC sampling parameter: benzo(a)pyrene.

ISGS Site 3192-23 (Residence)

- Station 3034+21 to Station 3034+89 (US 150), 0 to 60 feet RT (Residence, PESA Site 3192-23, 1515 Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(1). COC sampling parameter: manganese.

ISGS Site 3192-26 (Vacant Land)

- Station 3029+26 to Station 3030+93 (US 150), 0 to 85 feet RT (Vacant Land, PESA Site 3192-26, 1500 block of Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(3). COC sampling parameter: benzo(a)pyrene.
- Station 3031+54 to Station 3032+30 (US 150), 0 to 60 feet RT (Vacant Land, PESA Site 3192-26, 1500 block of Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(2). COC sampling parameters: lead, manganese

ISGS Site 3192-27 (Vacant Land)

- Station 3029+28 to Station 3031+78 (US 150), 0 to 50 feet LT (Vacant Land, PESA Site 3192-27, 500 block of Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(1). COC sampling parameters: manganese, benzo(a)pyrene.
- Station 3031+78 to Station 3032+55 (US 150), 0 to 50 feet LT (Vacant Land, PESA Site 3192-27, 500 block of Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(3). COC sampling parameters: manganese, benzo(a)pyrene.
- Station 3032+55 to Station 3033+36 (US 150), 0 to 90 feet LT (Vacant Land, PESA Site 3192-27, 500 block of Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(2). COC sampling parameter: manganese.

ISGS Site 3192-28 (Commercial Property)

- Station 3027+90 to Station 3029+28 (US 150), 0 to 55 feet LT (Commercial Property, PESA Site 3192-28, 1606 Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(1). COC sampling parameters: manganese, pH.

ISGS Site 3192-30 (Vermilion Chevrolet Buick GMC)

- Station 3020+67 to Station 3021+92 (US 150), 0 to 80 feet RT (Vermilion Chevrolet Buick GMC, PESA Site 3192-30, 1615 Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(1). COC sampling parameter: manganese, arsenic.
- Station 3025+90 to Station 3027+91 (US 150), 0 to 70 feet RT (Vermilion Chevrolet Buick GMC, PESA Site 3192-30, 1615 Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(1). COC sampling parameters: manganese.
- Station 3027+91 to Station 3029+26 (US 150), 0 to 100 feet RT (Vermilion Chevrolet Buick GMC, PESA Site 3192-30, 1615 Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(2). COC sampling parameter: manganese.

ISGS Site 3192-33 (Commercial Building)

- Station 3019+62 to Station 3020+71 (US 150), 0 to 90 feet LT (Commercial Building, PESA Site 3192-33, 1628 Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(2). COC sampling parameters: lead, manganese.

ISGS Site 3192-34 (Big R Stores)

- Station 3019+62 to Station 3020+67 (US 150), 0 to 85 feet RT (Big R Stores, PESA Site 3192-34, 1625 Georgetown Road, Tilton): The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.09(a)(1). COC sampling parameter: lead.

TOPSOIL EXCAVATION AND PLACEMENT

Description: Topsoil excavation and placement shall be in accordance with Section 211 of the Standard Specifications for Road and Bridge Construction, except as noted herein.

General: Topsoil shall be segregated from remainder of excavated materials and shall be replaced on top of the trench as indicated in the plans. Finished topsoil thickness in commercial / residential areas shall be 6" minimum and finished topsoil thickness in agricultural areas shall be at a depth that matches the depth of the existing topsoil. All surplus, unstable, and unsuitable material shall be disposed of at the Contractor's expense. The volume of any unstable and/or unsuitable material removed will not be measured for payment. Removal and disposal of unstable and/or unsuitable material will not be measured for payment. The aforementioned shall be considered incidental to construction and no additional compensation will be allowed.

Basis of Payment: Topsoil Excavation and Placement shall be incidental to the contract and no compensation will be allowed. Any additional earthwork, including excavation, stockpiling and backfill required to accommodate this requirement shall be incidental to construction.

REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL

Description: This work shall be according to Section 202 of the Standard Specifications for Road and Bridge Construction except as noted herein.

Basis of Payment: This work shall not be paid for according to Article 109.04 and shall be considered incidental to the project.

FINAL SHAPING, TRIMMING AND FINISHING

Description: FINAL SHAPING, TRIMMING AND FINISHING shall be in accordance with Section 212 of the Standard Specifications for Road and Bridge Construction, except as noted herein.

Basis of Payment: This work shall be paid for in accordance with Section 212 of the Standard Specifications for Road and Bridge Construction, except revise Article 212.06 paragraph 2 to read:

“Blading off high spots in the existing earth shoulders where the roadway has been resurfaced and mowing required immediately prior to final inspection will be considered incidental to the work, and shall not be paid for.”

SODDING

Description: The work for SODDING shall be in accordance with Section 252 of the Standard Specifications for Road and Bridge Construction.

General: SODDING shall be done in accordance with Section 252 of the Standard Specifications for Road and Bridge Construction.

Fertilizer nutrients shall be applied in accordance to Article 252.03.

Method of Measurement: SODDING shall be measured for payment according to Article 252.12 of the Standard Specifications for Road and Bridge Construction.

Basis of Payment: This work shall be paid for in accordance with Article 252.13 of the Standard Specifications for Road and Bridge Construction.

SUPPLEMENTAL WATERING

Description: The work for SUPPLEMENTAL WATERING shall be in accordance with Section 252 of the Standard Specifications for Road and Bridge Construction.

General: SUPPLEMENTAL WATERING has been estimated for the SODDING areas for 3 additional waterings.

Method of Measurement: SUPPLEMENTAL WATERING shall be measured for payment according to Article 252.12 of the Standard Specifications for Road and Bridge Construction.

Basis of Payment: This work shall be paid for in accordance with Article 252.13 of the Standard Specifications for Road and Bridge Construction.

HOT-MIX ASPHALT – REQUIRED FIELD TESTS

Description: The work for HOT-MIX ASPHALT – REQUIRED FIELD TESTS shall be in accordance with Article 1030.05(d)(3) of the Standard Specifications for Road and Bridge Construction except as noted below.

General: Revise the first paragraph of Article 1030.05(d)(3) to read as follows:

Required Field Tests. The Contractor shall control the compaction process by testing the mix density at random locations determined by the engineer in accordance with the QC/QA document, “Determination of Random Density Test Site Locations”, and recording the results on forms approved by the engineer. The density locations will be disclosed and marked by the Engineer after all compaction efforts have been completed. Locations shall be laid out using a tape measure or an approved measuring wheel. The

contractor shall follow the density testing procedures detailed in the QC/QA document, “Illinois-Modified ASTM D 2950, Standard Test Method for Determination of Density of Bituminous Concrete In-Place by Nuclear Method”.

HOT-MIX ASPHALT – INDIVIDUAL DENSITY SITES

Effective: September 1, 2007

Revised: December 10 2014

Description: This work shall consist of evaluating the daily average offset density value as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications for Road and Bridge Construction except as follows:

Revise the Density Control Limits table in 1030.05(d)(4) of the Standard Specifications to read:

INDIVIDUAL OFFSET DENSITY CONTROL LIMITS			
Mixture Composition	Parameter	Mat	Confined & Unconfined Edge
		Daily Average Density Value	Daily Average Density Value
IL-4.75	Ndesign = 50	93.0 - 97.4% ^{1/}	90.0%
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 - 97.4%	90.0%
IL-9.5FG <1 ¼ in (32 mm)	Ndesign 50-90	90.0 - 95.0 % ^{1/}	90.0%
IL-9.5FG ≥1 ¼ in (32 mm)	Ndesign 50-90	92.0 – 96.0	90.0%
SMA	Ndesign 50 & 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.

Insert the following after the sixth paragraph Article 1030.05(d)(7) of the Standard Specifications:

When the daily average density value for a given offset exceeds the control limits, the Engineer shall be notified immediately.

If a daily average density value failure occurs at a given offset due to low density for a given mixture, additional compactive effort or paver adjustment shall be required and approved by the Engineer prior to additional paving. If a daily average density value failure occurs at a given offset due to high density for a given mixture, production shall cease until the problem has been investigated and corrected. Reducing compactive effort for failing high densities will not be allowed.

If two daily average density value failures occur at a given offset for a given mixture, the Engineer shall cease production.

103005(a)(4)

HOT-MIX ASPHALT MIXTURE IL-9.5FG

Effective: July 1, 2005

Revised: December 10, 2014

Description. This work shall consist of constructing fine graded hot-mix asphalt (HMA) surface course-or leveling binder with an IL-9.SFG mixture. Work shall be according to Sections 406, 407 and 1030 of the Standard Specifications, except as modified herein.

Equipment. Add the following to Article 406.03

- (i) Non-Vertical Impact Roller 1101.01

Materials. Revise Article 1003.03(c) of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradation for all HMA shall be FA 1, FA 2, FA 20, FA 21, or FA 22. For mixture IL-9.5FG, the fine aggregate fraction shall consist of at least 67 percent manufactured sand meeting FA 20, FA 21 or FA 22 gradation. The manufactured sand shall be stone sand, slag sand, steel slag sand, or combinations thereof."

Mixture Design. Add the following to the table in Article 1030.04(a)(1):

"High ESAL, MIXTURE COMPOSITION (% PASSING) ^{1/}		
Sieve Size	IL-9.5FG	
	min	max
1 1/2 in (37.5 mm)		
1 in. (25 mm)		
3/4 in. (19 mm)		
1/2 in. (12.5 mm)		100
3/8 in. (9.5 mm)	90	100
#4 (4.75 mm)	65	80
#8 (2.36 mm)	50	65
#16 (1.18 mm)	25	40
#30 (600 μm)	15	30
#50 (300 μm)	8	15
#100 (150 μm)	6	10
#200 (75 μm)	4	6.5
Ratio : Dust/Asphalt Binder		1.0

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

"VOLUMETRIC REQUIREMENTS : High ESAL			
	Voids in the Mineral Aggregate (VMA),% minimum		Voids Filled with Asphalt Binder (VFA),%
Ndesion	IL-19.0	IL-9.5 , IL 9.5FG	
50	13.5	15.0	65 - 78
70			65 - 75 ^{1/}
90			

1/ The VFA range for IL-9.SFG shall be 65 - 78 percent."

Quality Control/Quality Assurance (QC/QA). Revise the second table in Article 1030.05(d)(4) to read:

DENSITY CONTROL LIMITS			
Mixture Composition		Parameter	Individual Test
IL-4.75		Ndesign = 50	93.0 - 97.4% ^{1/}
IL-9.5FG	Lifts < 1.25 in. (32 mm)	Ndesign 50 - 90	90.0 - 95.0% ^{2/}
	Lifts ≥ 1.25 in. (32 mm)	Ndesign 50 - 90	92.0 - 96.0%
IL-9.5		Ndesign ≥ 90	92.0 - 96.0%
IL-9.5, IL-9.5L		Ndesign < 90	92.5 - 97.4%
IL-19.0		Ndesign ≥ 90	93.0 - 96.0%
IL-19.0, IL-19.0L		Ndesign < 90	93.0 - 97.4%

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.

CONSTRUCTION REQUIREMENTS

Leveling Binder. Revise the table and second paragraph of Article 406.05(c) of the Standard Specifications to read:

Leveling Binder	
Nominal, Compacted , Leveling Binder Thickness, in. (mm)	Mixture Composition
1 1/4 (32)	IL 4.75 , IL-9.5, IL-9.5 FG, or IL-9.SL
> 1 1/4 to 2 (32 to 50)	IL-9.5, IL-9.SFG, IL-9.5L

The density requirements of Article 406.07 (c) shall apply for leveling binder, machine method, when the nominal, compacted thickness is: 3/4 in. (19 mm) or greater for IL-9.5FG and IL 4.75 mixtures and 1 1/4 in. (32 mm) or greater for IL-9.5 and IL-9.5L mixtures."

Compaction. Revise Table 1 in Article 406.07(a) of the Standard Specifications to read:

TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA ^{4/}				
	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Level Binder: (When the density requirements of Article 406.05(c) do not apply.)	P ^{3/}	--	V _s , P ^{3/} , T _B , T _F , 3W	To the satisfaction of the Engineer.
Level Binder: (When placed at ≤ 1 1/4 (32 mm) and density requirements of Article 406.05 (c) apply.)	V _N , T _B , 3W	P ^{3/}	V _s , T _B , T _F	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
Level Binder ^{1/} >1 1/4 in. (32 mm) Binder and Surface ^{1/}	V _D , P ^{3/} , T _B , 3W	P ^{3/}	V _s , T _B , T _F	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
Bridge Decks ^{2/}	T _B	--	T _F	As specified in Articles: 582.05 and 582.06.

- 1/ If the average delivery at the job site is 85 ton/hr (75 metric ton/hr) or less, any roller combination may be used provided it includes a steel wheeled roller and the required density and smoothness is obtained.
- 2/ One T_B may be used for both breakdown and final rolling on bridge decks 300 ft (90 m) or less in length, except when the air temperature is less than 60 °F (15 °C).
- 3/ A vibratory roller (V_o) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder.
- 4/ For mixture IL-4.75 a minimum of two T_B and one T_F roller shall be provided. Both the T_B and T_F rollers shall be a minimum of 280 lb/in. (49 N/mm). P and V rollers will not be permitted.

Add the following to EQUIPMENT DEFINITION

V_N - Non-Vertical Impact roller operated in a mode that will provide non-vertical impacts and operate at a speed to produce not less than 10 impacts/ft (30 impacts/m).

Rollers. Add the following to Article 1101.01 of the Standard Specifications:

- h) The non-vertical impact roller shall be self-propelled and provide a smooth operation when starting, stopping or reversing directions. Non-vertical impact drum(s) amplitude and frequency shall be approximately the same in each direction and meet the following minimum requirements: drum diameter 48 in. (1200 mm), length of drum 66 in. (1650 mm), unit static force on drum(s) 125 lb/in. (22 N/m), adjustable eccentrics, and reversible eccentrics on non-driven drum(s). The total applied force and the direction it is applied for various combinations of VPM and eccentric positions shall be shown on decals on the roller or on a chart maintained with the roller. The 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.

Basis of Payment: Add the following two paragraphs after the third paragraph of Article 406.14 of the Standard Specifications:

"Mixture IL-9.5FG will be paid for at the contract unit price per ton (metric ton) for LEVELING BINDER (HAND METHOD), IL-9.5FG, of the Ndesign specified; LEVELING BINDER (MACHINE METHOD), IL-9.5FG, of the Ndesign specified; or HOT-MIX ASPHALT SURFACE COURSE, IL-9.5FG, of the Ndesign specified.

Mixture IL-9.5FG in which polymer modified asphalt binders are required will be paid for at the contract unit price per ton (metric ton) for POLYMERIZED LEVELING BINDER (HAND METHOD), IL-9.5FG, of the Ndesign specified; POLYMERIZED LEVELING BINDER (MACHINE METHOD), IL-9.5FG, of the Ndesign specified; or POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, IL-9.5FG, of the Ndesign specified."

HMA IL-9 5 FG

LONGITUDINAL JOINT DENSITY (D5-FG)

Effective: January 1, 2010

Revised: April 1, 2016

Description . This work shall consist of testing the density of longitudinal joints as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). This specification only covers the joint requirements for the mixes covered under QC/QA and does not apply to any mixes covered by the QCP or PFP specifications. Work shall be according to Section 1030 of the Standard Specifications except as follows.

General: Quality Control/Quality Assurance (QC/QA). Delete the second and third sentence of the third paragraph of Article 1030.05(d)(3) of the Standard Specifications.

Add the following paragraphs to the end of Article 1030.05(d)(3) of the Standard Specifications:

"Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge. (i.e. for a 4 in. (100 mm) lift the near edge of the density gauge or core barrel shall be within 4 in. (100 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 ten feet apart longitudinally along the unconfined pavement edge and centered at the random density test location."

Revise the Density Control Limits table in Article 1030.05(d){4} of the Standard Specifications to read:

"Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density Minimum
IL-4.75	Ndesign=50	93.0 - 97.4% ¹	90.0%
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 - 97.4%	90.0%
IL-9.5FG < 1 ¼ in (32 mm)	Ndesign = 50 - 90	90.0 - 95.0%	90.0%
IL-9.5FG > 1 ¼ in (32 mm)	Ndesign = 50 - 90	92.0 - 96.0%	90.0%
SMA	Ndesign = 50 & 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.

103005(d)(3)-2

NON-VERTICAL IMPACT ROLLER FOR HOT-MIX ASPHALT

Description: For all Hot-Mix Asphalt Mixtures placed at a rate exceeding 85 tons per hour (75 metric tons per hour), a Non-Vertical Impact roller may be used as the finish roller. The roller shall meet the requirements outlined below.

General: The roller shall be capable of operating in a mode that will provide non-vertical impacts and operate at a speed to produce not less than 10 impacts/ft (30 impacts/m). The roller shall be self-propelled and provide a smooth operation when starting, stopping or reversing directions. The non-vertical impact drum(s) amplitude and frequency shall be approximately the same in each direction and meet the following minimum requirements: drum diameter 48 in. (1200 mm), length of drum 66 in. (1650 mm), unit static force on drum(s) 125 lb/in. (22N/m), adjustable eccentrics, and reversible eccentrics on non-driven drum(s). The total applied force and the direction it is applied for various combinations of VPM and eccentric positions shall be shown on decals on the vibrating roller or on a chart maintained with the roller. The 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.

Basis of Payment: This work will not be measured for payment or paid for separately, but shall be considered as included in the price per ton (metric ton) or square yard (square meter) of the various items of HOT-MIX ASPHALT, of the mixture and design (if applicable) specified.

PORTLAND CEMENT CONCRETE BASE COURSE (VARIABLE DEPTH)

Description: This work shall consist of constructing proposed portland cement concrete base course as shown on the plans.

General: Proposed concrete base course shall be according the details shown on the Plans and to Section 353 of the Standard Specifications for Road and Bridge Construction. Concrete base course shall be thickened to match the depth of the bottom of the adjacent existing concrete base course.

Method of Measurement: PORTLAND CEMENT CONCRETE BASE COURSE (VARIABLE DEPTH) will be measured in place and the area computed in square yards. The width shall be as shown on the plans or as shown by the Engineer. Reinforcement bars and tie bars will not be measured for payment separately, but shall be included in the contract unit price for PORTLAND CEMENT CONCRETE BASE COURSE (VARIABLE DEPTH).

Basis of Payment: This work shall be paid for at the contract unit price per square yard for PORTLAND CEMENT CONCRETE BASE COURSE (VARIABLE DEPTH). The furnishing and placement of tie bars shall not be paid for separately, but shall be included in the contract unit price for PORTLAND CEMENT CONCRETE BASE COURSE (VARIABLE DEPTH).

PORTLAND CEMENT CONCRETE PAVEMENT 8” (JOINTED)

Description: This work shall consist of constructing proposed concrete pavement as shown on plans.

General: Proposed concrete pavement construction shall be according to Section 420 of the Standard Specifications for Road and Bridge Construction except as noted herein. Concrete pavement shall be thickened to match abutting concrete base course to allow connection with tie bars as shown in the details.

Method of Measurement: This work shall be measured for payment according to article 420.19 of the Standard Specifications except tie bars shall not be measured for payment, but shall be included incidental to concrete pavement construction.

Basis of Payment: This work shall be paid for according to Article 420.20 of the Standard Specifications.

PAVEMENT REMOVAL

Description: The work for PAVEMENT REMOVAL shall be in accordance with Section 440 of the Standard Specifications for Road and Bridge Construction.

General: PAVEMENT REMOVAL shall be in accordance with Section 440 of the Standard Specifications for Road and Bridge Construction, and as noted herein. PAVEMENT REMOVAL shall include adjacent Curb and Gutter as shown on the plans.

Method of Measurement: The measurement for PAVEMENT REMOVAL shall be in accordance with Section 440 of the Standard Specifications for Road and Bridge Construction, including the area to the back of the curb and gutter where shown on plans.

Basis of Payment: This work shall be paid for in accordance with Article 440.08 of the Standard Specifications for Road and Bridge Construction.

CONCRETE REINFORCEMENT BARS, TIE BARS, DOWEL BARS AND DOWEL BAR ASSEMBLY

Description: The material and work for installation of Concrete Reinforcement Bars, Tie Bars, Dowel Bars and Dowel Bar Assembly shall be performed in accordance to any Article of the Standard Specifications for Road and Bridge Construction which is needed for the project.

Basis of Payment: This material and work shall not be paid for, and shall be considered incidental to the pay item which requires.

WATER VALVES TO BE ADJUSTED

Description: This work shall consist of the horizontal and vertical adjustment of existing water valve boxes at the locations shown on the plans and as directed by the Engineer.

General: This work shall be completed in accordance with Section 602 of the Standard Specifications for Road and Bridge Construction

Basis of Payment: This work shall be paid for at the contract unit price per each for WATER VALVES TO BE ADJUSTED which price shall include all labor, materials, equipment, and all necessary incidental work.

CONTROLLED LOW STRENGTH MATERIAL

Description: This work shall be in accordance with Section 593 of the Standard Specifications for Road and Bridge Construction, except as noted herein.

General: This work shall include creating a concrete plug at the outlet of the pipe specified on the plans.

Method of Measurement: CONTROLLED LOW STRENGTH MATERIAL shall be measured for payment according to Article 593.05 of the Standard Specifications for Road and Bridge Construction. The concrete plug shall not be measured for payment.

Basis of Payment: This work shall be paid for at the contract unit price per cubic yard for CONTROLLED LOW STRENGTH MATERIAL. The work shall include all labor, excavation, backfill, materials, equipment and all necessary incidentals to the work. The concrete plug shall be considered incidental to the work.

COMBINATION CURB AND GUTTER, TYPE B-6.24, TYPE B-6.18, TYPE B-6.12

Description: This work shall consist of constructing proposed curb and gutter and medians as shown on plans.

General: Proposed curb and gutter construction shall be according to Section 606 of the Standard Specifications for Road and Bridge Construction except as noted herein. Combination curb and gutter thickness shall be as shown on the Plans.

Method of Measurement: This work shall be measured for payment according to article 606.14 of the Standard Specifications except tie bars shall not be measured for payment, but shall be included incidental to combination curb and gutter and median construction.

Basis of Payment: This work shall be paid for according to Article 606.15 of the Standard Specifications.

COMBINATION CURB AND GUTTER, TYPE B-6.24 (ABUTTING EXISTING PAVMENT)

Description: This work shall consist of constructing proposed curb and gutter adjacent to existing pavement.

General: Proposed curb and gutter construction shall be according the details shown on the Plans and to Section 606 of the Standard Specifications for Road and Bridge Construction except revise Paragraph 8 of article 606.07 to read:

“Areas of adjacent portland cement base course less than 24 in. in width shall be constructed monolithically with the combination curb & gutter. Areas of adjacent portland cement concrete base course greater than 24 in. in width may be constructed monolithically with the combination curb and gutter. When monolithic construction is performed, the following shall apply.”

Thickness of the curb & gutter shall be as shown on the details in the Plans and as directed by the engineer to allow tie bars to be placed into the existing pavement or concrete base course.

Method of Measurement: COMBINATION CURB & GUTTER, TYPE B-6.24 (ABUTTING EXISTING PAVMENT) shall be measured for payment according to article 606.14 of the Standard Specifications.

Basis of Payment: This work shall be paid for at the contract unit price per foot for COMBINATION CURB & GUTTER, TYPE B-6.24 (ABUTTING EXISTING PAVMENT) which price shall include all labor, material, equipment for the monolithic extension of the gutter flag as shown on the details up to 24 in.

IMPACT ATTENUATORS, RELOCATE (NON-DIRECTIVE), TEST LEVEL 2

Description: This work shall consist of all labor, materials, equipment and incidentals required to remove and relocate IMPACT ATTENUATORS, RELOCATE (NON-DIRECTIVE), TEST LEVEL 2 at the locations designated in the plans.

General: This work shall be completed in accordance with Section 706 of the Standard Specifications for Road and Bridge Construction and as noted herein. The Contractor shall salvage and use all materials and hardware to attach the relocated impact attenuator to the barrier wall. Any materials or hardware that are not salvageable shall be replaced by the contractor and no additional compensation will be allowed.

Basis of Payment: This work shall be paid for at the contract unit price per each for IMPACT ATTENUATORS, RELOCATE (NON-DIRECTIVE), TEST LEVEL 2 which price shall include all labor, materials, equipment, and all necessary incidental work.

REMOVE CONCRETE FOUNDATION – GROUND MOUNT

Description: This work shall consist of removing concrete foundations according to Section 737 of the Standard Specifications for Road and Bridge Construction.

General: Removal of concrete foundations shall be in accordance to Section 737 of the Standard Specifications for Road and Bridge Construction except revise Paragraph 1 of article 737.02(b) to read:

“All components of the concrete foundation, including the concrete, reinforcing, stub post, and electrical items, shall be removed at least 1 foot below the proposed ground line, or to below the proposed aggregate base course if improvements are proposed above the foundation.

Basis of Payment: This work shall be paid for at the contract unit price per each for REMOVE CONCRETE FOUNDATION – GROUND MOUNT. Any backfilling of after the removal of the

foundations shall not be paid for separately, but shall be included in the contract unit price for REMOVE CONCRETE FOUNDATION – GROUND MOUNT.

CONCRETE BARRIER REMOVAL (SPECIAL)

Description: This work shall consist of all labor, materials, equipment, and incidentals required to salvage and haul removed temporary concrete barrier sections to the Village of Tilton Public Works Site at 1001 Tilton Road or as directed by the Engineer.

Method of Measurement: CONCRETE BARRIER REMOVAL (SPECIAL) shall be measured according to Article 440.07.

Basis of Payment: This work shall be paid for at the contract unit price per foot for CONCRETE BARRIER REMOVAL (SPECIAL).

CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)

Description: This work shall consist of all labor, materials, equipment and incidentals required to construct CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL) at the locations designated in the plans.

General: This work shall be completed in accordance with Section 606 of the Standard Specifications for Road and Bridge Construction and the details shown on the plans.

Method of Measurement: CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL) shall be measured for payment according to Article 606.14 of the Standard Specifications for Road and Bridge Construction. Furnishing and placement of tie bars and removal of pavement for ramped noses will not be measured for payment but shall be considered included in the unit cost price of CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL) and no additional compensation will be allowed.

Basis of Payment: This work shall be paid for at the contract unit price per square foot for CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL).

GAS VALVES TO BE ADJUSTED

Description: This work shall consist of the horizontal and vertical adjustment of existing gas valve boxes at the locations shown on the plans and as directed by the Engineer.

General: This work shall be completed in accordance with Section 602 of the Standard Specifications for Road and Bridge Construction.

Basis of Payment: This work shall be paid for at the contract unit price per each for GAS VALVES TO BE ADJUSTED which price shall include all labor, materials, equipment, and all necessary incidental work.

UNDERGROUND CONDUIT, PVC 2” DIA.

UNDERGROUND CONDUIT, PVC 2 ½” DIA.

UNDERGROUND CONDUIT, PVC 3” DIA.

UNDERGROUND CONDUIT, PVC 4” DIA.

Description: This work shall consist of furnishing and installing PVC conduit of the size specified in accordance with Section 810 of the Standard Specifications and the following additions or exceptions.

General: All conduits used for electrical systems shall be grey in color. All conduits used for fiber optic interconnect cable shall be orange in color. All conduits shall be provided with ¼” continuous nylon pull ropes approved by the Engineer. A minimum of 2’ of rope shall be provided at each end of a conduit run. All conduits augured below pavement shall be Schedule 80 PVC. The term augured shall include both the pushed and bored method of installing the conduit. Because of the differences in equipment and techniques, the Contractor may use either method to install the conduit for the term augured.

The substitution of HDPE conduit of similar schedule for PVC conduit shall be permitted as approved by the Engineer, with no change in compensation. The substitution of galvanized steel conduit for PVC conduit shall be permitted as approved by the Engineer, with no change in compensation.

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

When HDPE conduit is required to be spliced to steel conduit sections, a suitable threaded connector shall be installed.

Intercepting existing conduit, including all required adapters, shall be included in the cost of the respective conduit pay item, and no additional compensation will be allowed.

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot for UNDERGROUND CONDUIT, PVC, of the size specified, which price shall include all labor, equipment, and material necessary to complete the work as specified. Backfilling of conduit trenches with earth, screenings, sand, or controlled low-strength material will not be paid for separately but shall be included in the cost of the conduit, and no additional compensation will be allowed. Substitution of conduit material shall be permitted as specified herein and as approved by the Engineer, with no change in compensation.

HANDHOLE, PORTLAND CEMENT CONCRETE, DOUBLE

HANDHOLE, PORTLAND CEMENT CONCRETE

Description: This work shall consist of furnishing and installing cast-in-place or precast concrete handholes and double handholes in accordance with Section 814 of the Standard Specifications and the following additions or exceptions.

Composite concrete handholes and double handholes shall not be allowed. Handholes and double handholes used for the traffic signal system shall have the words "TRAFFIC SIGNALS" cast into the cover.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for HANDHOLE, or DOUBLE HANDHOLE, of the material specified, which price shall include all labor, equipment, and material necessary to complete the work as specified.

GULFBOX JUNCTION REMOVAL

Description: This work shall consist of the removal and disposal of existing gulfbox junctions in accordance with the applicable portions of Section 895 of the Standard Specifications and the following additions or exceptions.

General: The gulfbox junction shall be removed in its entirety. Portions of the existing conduit entering and exiting the gulfbox junction that interfere in any way with the proposed construction shall also be removed. Existing conduit that does not interfere with the proposed construction shall be capped and abandoned in place unless otherwise directed by the Engineer. Removal of the existing conduit will not be paid for separately but shall be included in the cost of Gulfbox Junction Removal, and no additional compensation will be allowed.

The existing cable entering and exiting the gulfbox junction shall be removed unless otherwise directed by the Engineer. The existing cable that is removed shall not be reused. Removal of the existing cable will not be paid for separately but shall be included in the cost of Remove Existing Traffic Signal Equipment, Special, and no additional compensation will be allowed.

Removed material shall be disposed of by the Contractor in accordance with Article 202.03 of the Standard Specifications.

Voids created by the removals shall be backfilled with controlled low-strength material unless otherwise directed by the Engineer. Turf areas disturbed during removal operations shall be restored with topsoil and sod unless otherwise directed by the Engineer. All excavation, backfill, controlled low-strength material, topsoil, and sod required to remove the existing gulfbox junction and restore the disturbed area shall be included in the cost of Gulfbox Junction Removal, and no additional compensation will be allowed.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for GULFBOX JUNCTION REMOVAL, which price shall include all labor, equipment, and material necessary to complete the work as specified.

FULL-ACTUATED CONTROLLER AND TYPE IV CABINET

Description: This work shall consist of furnishing and installing a full-actuated controller in a controller cabinet in accordance with Section 857 of the Standard Specifications, the applicable portions of Section 864 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: The full-actuated controller shall be the Siemens M52 TS2 Type 2 controller with fiber modem and shall be configured with ECOM firmware 3.34g and the latest NTCIP compliant firmware.

The controller shall function in a fiber optic network that communicates via Ethernet switches with SFP transceivers and fiber optic jumpers.

The Type IV controller cabinet shall be the Eagle Size P base mounted cabinet. The controller cabinet shall be constructed of unpainted aluminum.

The controller cabinet shall include a TS-1 conflict monitor, TS-1 load switches, a TS-1 panel and terminal facilities, and a TS-1 flasher unit and flasher relays.

The controller cabinet shall include a fiber optic distribution enclosure for termination of the fiber optic cable. The distribution enclosure shall be the Multilink FRM-2RU-4X-SO and shall have adequate capacity to accommodate the number of fibers to be terminated in the cabinet. The enclosure shall be shelf mounted and shall support ST terminations.

The controller cabinet shall contain separate ground and neutral buses. The neutral bus shall be electrically isolated from ground. The controller cabinet shall be bonded to the equipment grounding conductor in accordance with the NEC and the NESC.

The controller cabinet shall contain the circuit breakers, lighting contactor, and Hand-Off-Auto switch as shown in the "Traffic Signal Controller Installation Diagram (Illinois Route 1 and Ramp Road)" in the plans. All circuit breakers shall be clearly labeled. The lighting contactor shall be manufactured by Square D and shall be a minimum of 4 pole, 30 amp, 240 VAC with 120 VAC electrically held coil. The Hand-Off-Auto switch shall be manufactured by Square D and shall be connected such that the lights are on in the Hand position and are controlled by the photocell in the Auto position.

The anti-backup feature for controller programming required in Article 1073.01(c) of the Standard Specifications shall have the following added to the definition shown in Article 1073.01(a): "The components used to accomplish this feature shall be hardwired on the controller cabinet back panel and labeled for identification."

The Contractor shall make all necessary connections of the traffic signal cables, fiber optic cables, and roadway lighting cables in the controller cabinet. The Contractor shall provide all equipment and make all connections required to receive the existing internet signal along the fiber optic cable from the proposed controller cabinet at Southgate Drive.

The Contractor shall submit a detailed plan of the controller, cabinet, and all peripheral equipment included in the cabinet with the traffic signal shop drawings.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, which price shall include all labor, equipment, and material necessary to complete the work as specified.

The Ethernet switches with SFP transceivers and fiber optic jumpers to be installed in the traffic signal controller cabinet for the fiber optic network will be paid for separately. The additional equipment to be installed in the traffic signal controller cabinet for the wide area video detection system and the uninterruptable power supply will be paid for separately.

UNINTERRUPTABLE POWER SUPPLY, STANDARD

Description: This work shall consist of furnishing and installing an uninterruptable power supply in accordance with Section 862 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: The traffic signal controller cabinet shall contain a rack-mountable, NEMA-approved uninterruptable power supply (UPS) manufactured by Alpha Technologies. The UPS shall provide a minimum of two hours of full run-time operation.

The battery cabinet for the UPS shall be mounted as shown in the “UPS Battery Cabinet Mounting Detail (Illinois Route 1 and Ramp Road)” in the plans and as specified herein. The battery cabinet shall be installed on the controller cabinet foundation and bolted directly to the left side of the controller cabinet (when looking into the controller cabinet) with at least four bolts. There shall not be a gap between the battery cabinet and the controller cabinet. The cables shall be routed through the sides of the cabinets, with the holes in the cabinets protected with grommets. Only the batteries shall be housed in the battery cabinet; all other UPS equipment shall be housed in the controller cabinet.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for UNINTERRUPTABLE POWER SUPPLY, STANDARD, which price shall include all labor, equipment, and material necessary to complete the work as specified, including the battery cabinet.

ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C,

ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C,

ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C,

ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C

Description: This work shall consist of furnishing and installing electric cables in conduit, complete with all splicing, identifications, and terminations, in accordance with Section 873 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: All cables shall be tagged with wiring identification markers at each point of access. All handholes, gulfbox junctions, junction boxes, pole handholes, and controller cabinets shall be considered points of access. Wiring identification markers shall be in accordance with Article 1066.07 of the Standard Specifications. The type of wiring identification marker shall be determined by the Engineer.

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, of the type, size, and number of conductors specified, which price shall include all labor, equipment, and material necessary to complete the work as specified.

**ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING
CONDUCTOR, NO. 6 1C**

Description: This work shall consist of furnishing and installing electric cables in conduit, complete with all splicing, identifications, and terminations, in accordance with Section 873 of the Standard Specifications, the details in the plans and applicable Highway Standards, and the following additions or exceptions.

General: The insulation color shall be green.

Equipment grounding conductors shall be made continuous by splicing. Splices shall only be permitted in handholes, double handholes, post bases, and pole handholes unless otherwise directed by the Engineer. All splices shall be irreversible hydraulic compression splices in accordance with Article 1066.06 of the Standard Specifications. No other types of splices shall be permitted. All compression splices shall be neat and direct to the path of ground.

Equipment grounding conductors shall be connected to each grounding electrode conductor in the traffic signal system with irreversible hydraulic compression splices or connected to each ground rod in the traffic signal system with exothermic welds. Refer to the “Traffic Signal Grounding Diagram (Illinois Route 1 and Southgate Drive)” and the “Traffic Signal Grounding Diagram (Illinois Route 1 and Ramp Road)” in the plans for additional information.

All required compression splices and all exothermic welds not included in the cost of a concrete foundation shall be included in the cost of Electric Cable in Conduit, Equipment Grounding Conductor, No. 6 1C, and no additional compensation will be allowed.

The grounding wire shall be bonded to the grounded conductor at the service disconnect in accordance with the requirements of Ameren Illinois, the NEC, and the NESC.

A ground rod shall be installed in the existing double handhole at the Southgate Drive controller cabinet for the proposed grounding system at the existing signalized intersection. The ground rod shall be in accordance with Article 1087.01(b) of the Standard Specifications. A No. 6 AWG bare, solid copper grounding electrode conductor pigtail may be installed for use in splicing the equipment grounding conductors in the double handhole. The grounding electrode conductor pigtail shall be exothermically welded to the ground rod in the double handhole. The ground rod, grounding electrode conductor pigtail, and exothermic weld will not be paid for separately but shall be included in the cost of Electric Cable in Conduit, Equipment Grounding Conductor, No. 6 1C, and no additional compensation will be allowed.

When the combination mast arm mounted luminaires and LED internally illuminated street name signs are supplied by the same power source as the traffic signal system, the bonded ground system for the luminaires and signs may utilize the bonded ground system for the traffic signals. All luminaires and signs that are part of the traffic signal system shall be grounded.

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C, which price shall include all labor, equipment, and material necessary to complete the work as specified.

TRAFFIC SIGNAL POST, ALUMINUM 10 FT.

TRAFFIC SIGNAL POST, ALUMINUM 14 FT.

Description: This work shall consist of furnishing and installing a traffic signal post in accordance with Section 875 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: The post and base shall be made of aluminum. The post shall be furnished with an aluminum pole cap or a terminal compartment. The base shall be furnished with an aluminum reinforcing collar and a grounding lug suitable for connecting a copper equipment grounding conductor.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for TRAFFIC SIGNAL POST, ALUMINUM, of the length specified, which price shall include all labor, equipment, and material necessary to complete the work as specified.

STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 48 FT.

STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 50 FT.

STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 58 FT.

STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 36 FT.

(SPECIAL)

STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 46 FT.

(SPECIAL)

STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 54 FT.

(SPECIAL)

Description: This work shall consist of furnishing and installing a steel combination mast arm assembly and pole in accordance with Section 877 of the Standard Specifications, the details in the plans and applicable Highway Standards, and the following additions or exceptions.

General: The steel combination mast arm assembly and pole shall be manufactured by Valmont.

The luminaire mounting height as measured from the pole base shall be 40 feet. The luminaire arm length shall be 15 feet. The luminaire arm shall be installed parallel to the traffic signal mast arm as shown in the plans. The luminaire arm connections shall be designed to prevent rotation of the luminaire arm on the mast arm pole.

For the Steel Combination Mast Arm Assembly and Pole (Special) pay items, a second luminaire arm shall be installed perpendicular the traffic signal mast arm as shown in the plans. The second luminaire mounting height as measured from the pole base shall be 40 feet. The second luminaire arm length shall

be 15 feet. The luminaire arm connections shall be designed to prevent rotation of the luminaire arm on the mast arm pole. The additional luminaire arm shall be included in the cost of the respective Steel Combination Mast Arm Assembly and Pole (Special) pay item, and no additional compensation will be allowed.

Mast Arm Dampening Device

A 72" x 36" dampening device shall be furnished and installed on all traffic signal mast arms that are 40 feet in length or more in accordance with the details shown in the plans. The dampening device shall be installed equidistant between the two outermost signal heads.

The dampening device shall consist of a 72" x 36" Type 1 unpainted aluminum sign stock mounted horizontally on top of the mast arm with the 36" length perpendicular to the arm.

Furnishing and installing the mast arm dampening device shall be included in the cost of the respective mast arm pay item, and no additional compensation will be allowed.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for STEEL COMBINATION MAST ARM ASSEMBLY AND POLE or STEEL COMBINATION MAST ARM ASSEMBLY AND POLE (SPECIAL), of the signal arm length specified, which prices shall include all labor, equipment, and material necessary to complete the work as specified.

CONCRETE FOUNDATION, TYPE A

Description: This work shall consist of constructing a concrete foundation for a traffic signal post in accordance with Section 878 of the Standard Specifications, the details in the plans and applicable Highway Standards, and the following additions or exceptions.

General: The No. 6 AWG bare, solid copper grounding electrode conductor shall be exothermically welded to the ground rod in the concrete foundation. The exothermic weld shall be included in the cost of the concrete foundation.

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot of depth of CONCRETE FOUNDATION, TYPE A, which price shall include all labor, equipment, and material necessary to complete the work as specified.

CONCRETE FOUNDATION, TYPE C

Description: This work shall consist of constructing a concrete foundation and concrete apron for a traffic signal controller cabinet and UPS battery cabinet in accordance with Section 878 of the Standard Specifications, the details in the plans and applicable Highway Standards, and the following additions or exceptions.

General: The ground rod for the concrete foundation shall be located in the double handhole at the controller cabinet rather than in the concrete foundation. The ground rod shall be used for the proposed grounding system at the signalized intersection. A No. 6 AWG bare, solid copper grounding electrode conductor pigtail may be installed for use in splicing the equipment grounding conductors in the double

handhole. The grounding electrode conductor pigtail shall be exothermically welded to the ground rod in the double handhole. The ground rod, grounding electrode conductor pigtail, and exothermic weld will not be paid for separately but shall be included in the cost of Concrete Foundation, Type C, and no additional compensation will be allowed.

A 2" diameter PVC conduit shall be provided in the concrete foundation for future use. The conduit shall extend two feet beyond the concrete foundation and shall be capped below grade. The 2" diameter PVC conduit will not be paid for separately but shall be included in the cost of Concrete Foundation, Type C, and no additional compensation will be allowed.

The concrete foundation shall be wide enough to accommodate the controller cabinet, the UPS battery cabinet, and the conduits entering the meter socket. The concrete apron shall be a minimum of 6" thick.

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot of depth of CONCRETE FOUNDATION, TYPE C, which price shall include all labor, equipment, and material necessary to complete the work as specified.

CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER

CONCRETE FOUNDATION, TYPE E, 42-INCH DIAMETER

Description: This work shall consist of constructing a concrete foundation for a traffic signal mast arm pole in accordance with Section 878 of the Standard Specifications, the details in the plans and applicable Highway Standards, and the following additions or exceptions.

General: The No. 6 AWG bare, solid copper grounding electrode conductor shall be exothermically welded to the ground rod in the concrete foundation. The exothermic weld shall be included in the cost of the concrete foundation.

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot of depth of CONCRETE FOUNDATION, TYPE E, of the diameter specified, which price shall include all labor, equipment, and material necessary to complete the work as specified.

DRILL EXISTING HANDHOLE

Description: This work shall consist of drilling a hole in an existing handhole for furnishing and installing new conduit in accordance with Section 879 of the Standard Specifications and the following additions or exceptions.

General: Portions of the existing conduit entering or exiting the handhole that are not designated to be reused and interfere in any way with the proposed construction shall be removed. Existing conduit that does not interfere with the proposed construction shall be capped and abandoned in place unless otherwise directed by the Engineer. Openings in the existing handhole that are not used shall be filled using a method approved by the Engineer. Removal or abandonment of the existing conduit and filling openings in the existing handhole will not be paid for separately but shall be included in the cost of Drill Existing Handhole, and no additional compensation will be allowed.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for DRILL EXISTING HANDHOLE, which price shall include all labor, equipment, and material necessary to complete the work as specified.

SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED

SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 4-SECTION, BRACKET MOUNTED

SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 4-SECTION, MAST ARM MOUNTED

SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED

SIGNAL HEAD, POLYCARBONATE, LED, 2-FACE, 1-3-SECTION, 1-4-SECTION, BRACKET MOUNTED

SIGNAL HEAD, POLYCARBONATE, LED, 2-FACE, 1-4-SECTION, 1-5-SECTION, BRACKET MOUNTED

Description: This work shall consist of furnishing and installing a light emitting diode (LED) signal head in accordance with Section 880 of the Standard Specifications, the details in the plans and applicable Highway Standards, and the following additions or exceptions.

General: The LED traffic signal modules shall be manufactured by Dialight Corporation and shall have a 15-year manufacturer's warranty.

The circular and arrow LED traffic signal modules shall measure 12" in diameter. The lens for a red or yellow traffic signal module shall be tinted red or yellow. The lens for a green traffic signal module shall be clear.

The housing and door for the polycarbonate signal head shall be yellow in color.

The terminal compartment for two-way, post mounted signal heads shall be on top of the post in accordance with Highway Standard 880006.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for SIGNAL HEAD, POLYCARBONATE, LED, of the number of signal faces, the number of signal sections in each signal face, and the method of mounting specified, which price shall include all labor, equipment, and material necessary to complete the work as specified.

**PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE,
BRACKET MOUNTED WITH COUNTDOWN TIMER**

Description: This work shall consist of furnishing and installing a light emitting diode (LED) pedestrian signal head in accordance with Section 881 of the Standard Specifications, the details in the plans and applicable Highway Standards, and the following additions or exceptions.

General: The LED pedestrian signal modules and LED countdown pedestrian signal modules shall be manufactured by Dialight Corporation and shall have a 5-year manufacturer's warranty.

Each directional unit shall consist of one LED pedestrian signal module and one LED countdown pedestrian signal module. The nominal dimensions of each module shall be 12" by 12" as detailed in the plans.

The pedestrian signal module shall have a two-symbol overlay configuration. The symbols for the walking person ("walk") and the upraised hand ("don't walk") shall be full symbols.

The housing and door for the polycarbonate pedestrian signal head shall be yellow in color.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER, which price shall include all labor, equipment, and material necessary to complete the work as specified.

PEDESTRIAN PUSH-BUTTON

Description: This work shall consist of furnishing and installing a pedestrian push-button and an appropriate traffic signal instruction sign in accordance with Section 888 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: The pedestrian push-button shall be the latest version of the BullDog ADA-compliant pedestrian push-button manufactured by Polara Enterprises LLC. The body style shall be round and yellow in color. The button style shall include left or right arrows as appropriate for the proposed direction of travel.

The mounting hardware shall include a 9" x 12" push-button frame. The MUTCD R10-3 sign shall be mounted to the push-button frame, with the finger and arrow on the sign legend pointing in the proposed direction of travel. A spacer shall be provided at each location where two 9" x 12" push-button frames will be mounted to the same traffic signal post. The push-button frame and spacer shall be yellow in color.

All necessary control equipment for the push-button to operate in latching mode shall be furnished and installed in the traffic signal controller cabinet as part of this pay item, along with all necessary power supplies and wiring in the controller cabinet.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for PEDESTRIAN PUSH-BUTTON, which price shall include all labor, equipment, and material necessary

to complete the work as specified, including all mounting hardware, signs, and control equipment and wiring.

RELOCATE EXISTING SIGNAL HEAD

RELOCATE EXISTING TRAFFIC SIGNAL POST

Description: This work shall consist of relocating an existing signal head or traffic signal post in accordance with Section 895 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: The Contractor shall remove, store, protect, and reinstall the existing equipment to be relocated in a workmanlike manner to avoid damaging, denting, or scratching the material. Any repair or touch-up required shall be performed by the Contractor using a method approved by the Engineer and at the Contractor's expense. The Contractor shall be responsible for any damage to the equipment caused during removal, storage, or reinstallation, including any required replacement of existing materials. The equipment shall be reinstalled at the locations shown on the plans in accordance with the appropriate Articles of the Standard Specifications and as directed by the Engineer.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for RELOCATE EXISTING SIGNAL HEAD or RELOCATE EXISTING TRAFFIC SIGNAL POST, which prices shall include all labor, equipment, and material necessary to complete the work as specified.

REMOVE EXISTING CONCRETE FOUNDATION

Description: This work shall consist of removing an existing concrete foundation in accordance with Section 895 of the Standard Specifications and the following additions or exceptions.

General: The concrete foundation shall be removed to a level at least three feet below the adjacent grade in accordance with Article 895.05 of the Standard Specifications. All portions of the existing foundation below this elevation that interfere in any way with the proposed construction shall be removed to the satisfaction of the Engineer, and no additional compensation will be allowed.

Portions of the existing conduit entering and exiting the concrete foundation that interfere in any way with the proposed construction shall also be removed. Existing conduit that does not interfere with the proposed construction shall be capped and abandoned in place unless otherwise directed by the Engineer. Removal of the existing conduit will not be paid for separately but shall be included in the cost of Remove Existing Concrete Foundation, and no additional compensation will be allowed.

The existing traffic signal cable entering and exiting the concrete foundation shall be removed unless otherwise directed by the Engineer. The existing cable that is removed shall not be reused. Removal of the existing cable will not be paid for separately but shall be included in the cost of Remove Existing Traffic Signal Equipment, Special, and no additional compensation will be allowed.

Removed material shall be disposed of by the Contractor in accordance with Article 202.03 of the Standard Specifications.

Voids created by the removals shall be backfilled with controlled low-strength material unless otherwise directed by the Engineer. Turf areas disturbed during removal operations shall be restored with topsoil and sod unless otherwise directed by the Engineer. All excavation, backfill, controlled low-strength material, topsoil, and sod required to remove the existing concrete foundation and restore the disturbed area shall be included in the cost of Remove Existing Concrete Foundation, and no additional compensation will be allowed.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for REMOVE EXISTING CONCRETE FOUNDATION, which price shall include all labor, equipment, and material necessary to complete the work as specified.

MODIFY EXISTING SERVICE INSTALLATION

Description: This work shall consist of removal and replacement of the existing service installation for the traffic signals at the intersection of Illinois Route 1 and Southgate Drive in accordance with the applicable portions of Sections 804 and 805 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: The Contractor shall coordinate removal of the existing service installation with Ameren Illinois. Removal of the existing service installation shall include the removal items shown in the “Modify Existing Service Installation Detail (Illinois Route 1 and Southgate Drive)” in the plans. Removed material shall be disposed of by the Contractor in accordance with Article 202.03 of the Standard Specifications. The existing meter will be removed by Ameren Illinois. The existing service pole and underground conduit shall be reused as shown on the detail in the plans.

The proposed service installation shall be in accordance with the requirements of Ameren Illinois, the latest edition of the National Electrical Code (NEC), the latest edition of the National Electrical Safety Code (NESC), and all state and local codes and requirements.

The proposed service shall be a 120/240 volt, single phase, three wire service. The main fused switch for the service disconnect shall be two-pole, rated 100 amps, and furnished with 100 amp fuses.

The Contractor shall provide a utility meter socket and a NEMA 4X stainless steel, weatherproof enclosure for the service disconnect switch. The meter socket and enclosure shall be mounted to the existing utility pole as shown in the “Modify Existing Service Installation Detail (Illinois Route 1 and Southgate Drive)” in the plans and the “Traffic Signal Controller Installation Diagram (Illinois Route 1 and Southgate Drive)” in the plans. The meter socket shall be in accordance with the requirements of Ameren Illinois. The enclosure shall be in accordance with Article 1086.02 of the Standard Specifications. The switch shall be service entrance rated and lockable. The meter socket and enclosure shall be connected with a 1½” diameter schedule 80 PVC conduit.

Three #3 AWG service cables shall be provided from the existing traffic signal controller cabinet to the proposed weatherhead located on the existing utility pole and shall include enough slack cable for the service connection by Ameren Illinois. The Contractor shall provide a 1½” diameter schedule 80 PVC conduit that runs down the existing service pole from the service disconnect switch to the existing underground conduit for the service installation as shown in the “Modify Existing Service Installation Detail (Illinois Route 1 and Southgate Drive)” in the plans.

The grounded conductor shall be bonded to ground at the service disconnect in accordance with the requirements of Ameren Illinois, the NEC, and the NESC. A #6 AWG bare, solid copper grounding electrode conductor shall be provided from the meter socket to the existing ground rod at the service pole and shall be exothermically welded to the ground rod. A 1" diameter schedule 80 PVC conduit shall be provided from the service disconnect switch to the ground rod for the #6 AWG grounding electrode conductor. A #6 AWG bare, solid copper grounding conductor shall be provided from the meter socket to the existing traffic signal controller cabinet in the 1½" diameter PVC conduit.

The Contractor shall be responsible for coordinating all requirements and fees for the service installation with Ameren Illinois and shall adhere to latest standards as provided by Ameren Illinois unless otherwise directed by the Engineer. No additional compensation will be allowed for work required for the electric service or utility connection fees, even though not explicitly shown on the plans or specified herein.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for MODIFY EXISTING SERVICE INSTALLATION, which price shall include all labor, equipment, and material necessary to complete the work as specified, including the meter socket, disconnect switch, 1" and 1½" diameter PVC conduit, weatherhead, #3 AWG service cables, #6 AWG grounding electrode conductor, #6 AWG grounding conductor, exothermic weld, other materials required by Ameren Illinois for the proposed service installation, and removal of the existing service installation.

WIDE AREA VIDEO DETECTION SYSTEM COMPLETE

Description: This work shall consist of furnishing and installing a wide area video detection system in accordance with the details in the plans and as specified herein.

General: Each wide area video detection system shall be TS-2 and manufactured by Iteris. The wide area video detection system at each signalized intersection shall include two Vantage Vector vehicle detection sensors for stop line and advanced detection on Route 1, two RZ-4 Advanced cameras with Wide Dynamic Range technology (RZ-4A WDR) for stop line detection on the side street, four SkyBracket camera mounts with stainless steel hardware for mounting the detection sensors and cameras six feet above the traffic signal mast arms, two 2-channel Vantage Edge2 processors, one Vantage TS2-IM bus interface unit module, one Vantage EdgeConnect quad-view remote communications module, one Vantage VRack shelf-mounted TS-2 detector rack with power supply to accommodate the required processors and modules, and one 10" LCD video monitor.

The coaxial cable shall be Belden 8281. The coaxial cable shall be a continuous unbroken run from the camera to the processor and shall be included in the cost of the Wide Area Video Detection System Complete. A sufficient length of coaxial cable shall be provided to allow the camera to be installed at any point along the traffic signal mast arm. The power cable shall be No. 14 AWG three conductor signal cable in accordance with Section 873 of the Standard Specifications and will be paid for separately.

Installation and Training

The supplier of the wide area video detection system shall supervise the installation and testing of the system. The supplier shall also provide training to personnel of the Village of Tilton and IDOT District 5 in the operation, set up, and maintenance of the system. This work will not be paid for separately but shall

be included in the cost of the wide area video detection system, and no additional compensation will be allowed.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for WIDE AREA VIDEO DETECTION SYSTEM COMPLETE, which price shall be considered payment in full for all labor, equipment, and material necessary to complete the work as specified, including the coaxial cables. Individual components of the wide area video detection system will not be paid for separately. The No. 14 AWG three conductor signal cable will be paid for separately.

LED INTERNALLY ILLUMINATED STREET NAME SIGN

Description: This work shall consist of furnishing and installing an LED internally illuminated street name sign in accordance with the details in the plans and as specified herein..

General: The sign shall be the RAZOR Internally Illuminated LED Street Name Sign manufactured by Temple Edge-Lit. The sign dimensions shall be 72”L x 24”H x 1.6”D or 96”L x 24”H x 1.6”D as shown in the plans. The sign shall be single-sided with a white border and legend on a green background. The legend shall be as shown in the plans. The font shall be Series B with 12” uppercase letters and 9” lowercase letters. The housing shall have a standard black finish. The Contractor shall submit a layout of each sign face with the shop drawings for the sign.

The sign shall not have an individual photocell and will be controlled by the lighting contactor in the traffic signal controller cabinet as shown on the plans.

The sign shall be mounted to the traffic signal mast arm using the bracket mount installation in accordance with Highway Standard 720016.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for LED INTERNALLY ILLUMINATED STREET NAME SIGN, which price shall include all labor, equipment, and material necessary to complete the work as specified.

FIBER OPTIC CABLE IN CONDUIT, 12 FIBERS, SINGLE MODE

Description: This work shall consist of furnishing and installing fiber optic cable and all required accessories in accordance with Section 871 of the Standard Specifications, the applicable portions of Section 864 of the Standard Specifications, and the following additions or exceptions.

General: The fiber optic cable shall have twelve single-mode fibers and shall meet the applicable requirements of Article 1076.02 of the Standard Specifications. The fiber optic cable shall be manufactured by Corning Cable Systems and shall be made in the United States.

A minimum of thirteen feet of extra cable shall be provided in each controller cabinet. Cable warning tags shall be furnished and installed as required by the Standard Specifications.

All terminations necessary or directed by the Engineer shall be included in this pay item. All fiber optic cable runs shall be continuous without splices between termination sites. All twelve single-mode fibers

shall be terminated at each end of each fiber optic cable run in each traffic signal controller cabinet. The fibers shall be terminated using ST connectors manufactured by Corning Cable Systems.

The fiber optic cable shall be tested according to the Standard Specifications. The Contractor shall test all terminated fibers.

A No. 12 stranded copper wire shall be installed in the same conduit as the fiber optic cable for a tracer cable. The copper wire shall terminate at each handhole and controller cabinet. A tag shall be placed on the copper wire in each handhole and controller cabinet with the legend "Fiber Optic Tracer Cable". This work will not be paid for separately but shall be included in the cost of the Fiber Optic Cable, and no additional compensation will be allowed.

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot for FIBER OPTIC CABLE IN CONDUIT, 12 FIBERS, SINGLE MODE, which price shall include all labor, equipment, and material necessary to complete the work as specified, including all cable terminations.

SERVICE INSTALLATION, TYPE A (MODIFIED)

Description: This work shall consist of furnishing and installing a service installation for the traffic signals at the intersection of Illinois Route 1 and Ramp Road in accordance with the applicable portions of Sections 804 and 805 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: The service installation shall be in accordance with the requirements of Ameren Illinois, the latest edition of the National Electrical Code (NEC), the latest edition of the National Electrical Safety Code (NEC), and all state and local codes and requirements.

The proposed service shall be a 120/240 volt, single phase, three wire service. The main fused switch for the service disconnect shall be two-pole, rated 100 amps, and furnished with 100 amp fuses.

The Contractor shall provide a utility meter socket and a NEMA 4X stainless steel, weatherproof enclosure for the service disconnect switch. The meter socket and enclosure shall be mounted to the right side of the traffic signal controller cabinet (when looking into the controller cabinet) as shown in the "Service Installation, Type A (Modified) Detail (Illinois Route 1 and Ramp Road)" in the plans and the "Traffic Signal Controller Installation Diagram (Illinois Route 1 and Ramp Road)" in the plans. The meter socket shall be in accordance with the requirements of Ameren Illinois. The enclosure shall be in accordance with Article 1086.02 of the Standard Specifications, except that only one side of the enclosure shall be furnished with a hub for installing conduit. The switch shall be service entrance rated and lockable. The meter socket and enclosure shall be connected with a 2" diameter rigid galvanized steel (RGS) conduit with grounding bushings.

Three #3 AWG service cables shall be provided from the traffic signal controller cabinet to the proposed weatherhead located on the existing utility pole and shall include enough slack cable for the service connection by Ameren Illinois. A 2" diameter RGS conduit shall be provided from the meter socket to the proposed underground conduit for the three #3 AWG service cables as shown in the "Service Installation, Type A (Modified) Detail (Illinois Route 1 and Ramp Road)" in the plans. The conduit shall pass through

the traffic signal controller cabinet foundation. The proposed underground conduit for the service cables shall be 2" diameter schedule 80 PVC.

The grounded conductor shall be bonded to ground at the service disconnect in accordance with the requirements of Ameren Illinois, the NEC, and the NESC. A #6 AWG bare, solid copper grounding electrode conductor shall be provided from the traffic signal controller cabinet to the ground rod located in the proposed double handhole and shall be exothermically welded to the ground rod. A 1" diameter schedule 80 PVC conduit shall be provided from the meter socket to the proposed double handhole for the #6 AWG bare, solid copper grounding electrode conductor as shown in the "Service Installation, Type A (Modified) Detail (Illinois Route 1 and Ramp Road)" in the plans. The conduit shall pass through the traffic signal controller cabinet foundation.

The Contractor shall be responsible for coordinating all requirements and fees for the service installation with Ameren Illinois and shall adhere to latest standards as provided by Ameren Illinois unless otherwise directed by the Engineer. No additional compensation will be allowed for work required for the electric service or utility connection fees, even though not explicitly shown on the plans or specified herein.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for SERVICE INSTALLATION, TYPE A (MODIFIED), which price shall include all labor, equipment, and material necessary to complete the work as specified, including the meter socket, disconnect switch, 2" diameter RGS conduit, 1" and 2" diameter PVC conduit, weatherhead, #3 AWG service cables, #6 AWG grounding electrode conductor, exothermic weld, and other materials required by Ameren Illinois for the service installation.

HANDHOLE TO BE ADJUSTED

Description: This work shall include all labor, equipment, tools, and materials needed to adjust existing handholes located within proposed sidewalks or as directed by the Engineer.

General:

Materials

The frame and lid for the handhole to be adjusted shall be a Neenah R-6660-JP Light Duty Square Frame and Lid or East Jordan.

Construction Requirements

The Contractor shall remove the existing handhole frame and lid and dispose of them in accordance with Article 202.03 of the Standard Specifications. The top of the existing handhole shall be saw cut to the appropriate elevation and slope to fit within the proposed sidewalk. The Contractor shall provide a new frame and lid for the adjusted handhole. The new handhole frame shall be cast into the proposed sidewalk. Joints in the proposed sidewalk shall be tooled around the handhole frame as directed by the Engineer. The joint between the top of the existing handhole and the bottom of the proposed sidewalk shall be sealed as directed by the Engineer.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for HANDHOLE TO BE ADJUSTED, which price shall include all labor, equipment, and material necessary to complete the work as specified.

CONTROLLER CABINET TYPE IV, SPECIAL

Description: This work shall consist of furnishing and installing a controller cabinet and peripheral equipment on an existing concrete foundation for an existing traffic signal controller, along with the modification of the existing traffic signal controller, in accordance with the applicable portions of Sections 857, 863, 864, and 895 of the Standard Specifications and the following additions or exceptions.

General: The existing Siemens M52 TS2 Type 2 traffic signal controller at the Illinois Route 1 and Southgate Drive intersection shall be installed in the new controller cabinet.

The existing Siemens M52 TS2 Type 2 traffic signal controller shall be modified as necessary for the proposed traffic signal installation.

The controller shall function in a fiber optic network that communicates via Ethernet switches with SFP transceivers and fiber optic jumpers.

The Type IV controller cabinet shall be the Eagle Size P base mounted cabinet. The controller cabinet shall be constructed of unpainted aluminum.

The controller cabinet shall include a TS-1 conflict monitor, TS-1 load switches, a TS-1 panel and terminal facilities, and a TS-1 flasher unit and flasher relays.

The controller cabinet shall include a fiber optic distribution enclosure for termination of the fiber optic cable. The distribution enclosure shall be the Multilink FRM-2RU-4X-SO and shall have adequate capacity to accommodate the number of fibers to be terminated in the cabinet. The enclosure shall be shelf mounted and shall support ST terminations.

The controller cabinet shall contain separate ground and neutral buses. The neutral bus shall be electrically isolated from ground. The controller cabinet shall be bonded to the equipment grounding conductor in accordance with the NEC and the NESC.

The controller cabinet shall contain the circuit breakers, lighting contactor, and Hand-Off-Auto switch as shown in the "Traffic Signal Controller Installation Diagram (Illinois Route 1 and Southgate Drive)" in the plans. All circuit breakers shall be clearly labeled. The lighting contactor shall be manufactured by Square D and shall be a minimum of 4 pole, 30 amp, 240 VAC with 120 VAC electrically held coil. The Hand-Off-Auto switch shall be manufactured by Square D and shall be connected such that the lights are on in the Hand position and are controlled by the photocell in the Auto position.

The anti-backup feature for controller programming required in Article 1073.01(c) of the Standard Specifications shall have the following added to the definition shown in Article 1073.01(a): "The components used to accomplish this feature shall be hardwired on the controller cabinet back panel and labeled for identification."

The Contractor shall make all necessary connections of the traffic signal cables, fiber optic cables, and roadway lighting cables in the controller cabinet. The Contractor shall furnish and install the

equipment necessary to reestablish the existing internet drop in the new controller cabinet. The existing equipment for the internet drop may be reused as directed by the Engineer. The Contractor shall provide all equipment and make all connections required to transfer the existing internet signal along the fiber optic cable to the proposed controller cabinet at Ramp Road.

The Contractor shall submit a detailed plan of the controller cabinet and all peripheral equipment included in the cabinet with the traffic signal shop drawings.

The Contractor shall remove the existing traffic signal controller cabinet and peripheral equipment and return them to the Village of Tilton unless otherwise directed by the Engineer.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for CONTROLLER CABINET TYPE IV, SPECIAL, which price shall include all labor, equipment, and material necessary to complete the work as specified, including all modifications required to the existing traffic signal controller.

The Ethernet switches with SFP transceivers and fiber optic jumpers to be installed in the traffic signal controller cabinet for the fiber optic network will be paid for separately. The additional equipment to be installed in the traffic signal controller cabinet for the pedestrian push-buttons and the wide area video detection system will be paid for separately.

Removal of the existing traffic signal controller cabinet and peripheral equipment shall be included in the cost of Remove Existing Traffic Signal Equipment, Special, and no additional compensation will be allowed.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT, SPECIAL

Description: This work shall include all labor, equipment, tools, and materials needed to adjust existing handholes located within proposed sidewalks or as directed by the Engineer.

General: The Contractor shall remove the existing traffic signal equipment identified in the plans at the intersection of Illinois Route 1 and Southgate Drive. The existing traffic signal equipment that is removed shall remain the property of the Village of Tilton. The Contractor shall remove the equipment in a workmanlike manner to avoid damaging, denting, or scratching the material. Any repair or touch-up required shall be performed by the Contractor using a method approved by the Engineer and at the Contractor's expense. The Contractor shall store and protect the existing equipment at a location designated by the Engineer for pick-up by Village forces.

The Contractor shall remove the existing regulatory and street name signs from the existing traffic signal equipment and return them to the Village of Tilton. The removal of regulatory and street name signs will not be paid for separately but shall be included in the cost of Remove Existing Traffic Signal Equipment, Special, and no additional compensation will be allowed.

The existing detector loops shall be disconnected from their lead-in cables and abandoned in place. The existing traffic signal, lead-in, and service cables at the intersection shall be removed unless otherwise directed by the Engineer. The existing cables that are removed shall not be reused. The removal and disposal of electric cable will not be paid for separately but shall be included in the cost of Remove Existing Traffic Signal Equipment, Special, and no additional compensation will be allowed.

Measurement and Payment: This work will be measured and paid for at the contract lump sum price for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT, SPECIAL, which price shall include all labor, equipment, and material necessary to complete the work as specified. Removal of individual items will not be paid for separately.

ROADWAY LIGHTING COORDINATION

The Contractor shall notify the Village of Tilton at least 48 hours in advance of any work that requires power to the existing Village-owned lights to be shut off.

GULFBOX JUNCTION, COMPOSITE CONCRETE

Description: This work shall consist of furnishing and installing a gulfbox junction in accordance with Section 815 of the Standard Specifications and the following additions or exceptions

General: The gulfbox shall be composite concrete and manufactured by CDR or Armorcast Products Company. The gulfbox dimensions shall be 13”W x 24”L x 12”D with flared walls. The gulfbox cover shall be constructed of the same material as the gulfbox and shall have the words “STREET LIGHTING” cast into the cover. The gulfbox cover and collar shall be standard concrete grey color in sidewalks and shall be the manufacturer’s dark green color in grass areas.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for GULFBOX JUNCTION, COMPOSITE CONCRETE, which price shall include all labor, equipment, and material necessary to complete the work as specified.

ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10

ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 6

Description: This work shall be performed in accordance with Section 817 of the Standard Specifications and the following additions or exceptions.

General: Revise the second sentence of the first paragraph of Article 1066.02 to read: “**The cable shall be rated at a minimum of 90°C dry and 75°C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals.**”

Add the following to Article 1066.03 of the Standard Specifications: “**The cable shall be rated 600 volts and shall be UL Listed Type RHH/RHW/USE.**”

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C, of the size specified, which price shall include all labor, equipment, and material necessary to complete the work as specified.

LUMINAIRE, LED, SPECIAL

Description: This work shall consist of furnishing and installing a luminaire in accordance with Section 821 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

Materials: The full cut-off luminaire shall have a structured LED array to provide 21,000 initial lumens at 4,000K. CRI shall be 70. Distribution shall be Type III, Medium. Luminaire shall utilize a 4-bolt slip fitter with +/-5 degrees of adjustment for leveling. Provide luminaire with optional secondary surge protection device (10kV/5kA), IP66 optical, level and tool-less entry. Luminaire shall be suitable for use on a 480 volt system. The luminaire shall not have an individual photocell, but shall be furnished with a photocell receptacle and shorting cap. The luminaire shall have a gray finish.

The luminaire shall be the Evolve LED series manufactured by GE Lighting Systems, catalog number ERL2-5-21-C3-40-D-GRAY-A-G-I-L-R. A comparable product shall be the RoadFocus series manufactured by Philips Lumec, catalog number RFL-160W96LED-4K-G2-R3M-HVU- PH9-SP1-GY3.

The luminaire shall be installed on a relocated lighting unit or an existing lighting unit (see plans for locations).

Measurement and Payment: This work will be paid for at the contract unit price each for LUMINAIRE, LED, SPECIAL, which price shall include all labor, equipment, and material necessary to complete the work as specified.

LUMINAIRE INSTALLATION, TYPE 1

Description: This work shall consist of furnishing and installing a luminaire in accordance with Section 821 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

Materials: The full cut-off luminaire shall have a structured LED array to provide 21,000 initial lumens at 4,000K. CRI shall be 70. Distribution shall be Type III, Medium. Luminaire shall utilize a 4-bolt slip fitter with +/-5 degrees of adjustment for leveling. Provide luminaire with optional secondary surge protection device (10kV/5kA), IP66 optical, level and tool-less entry. The luminaire shall be furnished with a universal voltage driver suitable for use on a 240 volt system. The luminaire shall not have an individual photocell, but shall be furnished with a photocell receptacle and shorting cap. The luminaire shall have a gray finish.

The luminaire shall be the Evolve LED series manufactured by GE Lighting Systems, catalog number ERL2-0-21-C3-40-D-GRAY-A-G-I-L-R. A comparable product shall be the RoadFocus series manufactured by Philips Lumec, catalog number RFL-160W96LED-4K-G2-R3M-UNV- PH9-SP1-GY3.

Basis of Payment: This work will be paid for at the contract unit price each for LUMINAIRE INSTALLATION, TYPE 1, which price shall include all labor, equipment, and material necessary to complete the work as specified.

LUMINAIRE INSTALLATION, TYPE 2

Description: This work shall consist of furnishing and installing a luminaire in accordance with Section 821 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

Materials: The full cut-off luminaire shall have a structured LED array to provide 21,000 initial lumens at 4,000K. CRI shall be 70. Distribution shall be Type III, Medium. Luminaire shall utilize a 4-bolt slip fitter with +/-5 degrees of adjustment for leveling. Provide luminaire with optional secondary surge protection device (10kV/5kA), IP66 optical, level and tool-less entry. The luminaire shall be furnished with a universal voltage driver suitable for use on a 240 volt system. The luminaire shall have a gray finish. The luminaire shall be furnished with a photocell receptacle and a photocell. The photocell shall not be wired to the individual luminaire; instead, the photocell shall be wired to the lighting contactor located in the traffic signal controller cabinet as shown in the plans.

The luminaire shall be the Evolve LED series manufactured by GE Lighting Systems, catalog number ERL2-0-21-C3-40-E-GRAY-A-G-I-L-R. A comparable product shall be the RoadFocus

series manufactured by Philips Lumec, catalog number RFL-160W96LED-4K-G2-R3M-UNV- PH8-SP1-GY3.

Basis of Payment: This work will be paid for at the contract unit price each for LUMINAIRE INSTALLATION, TYPE 2, which price shall include all labor, equipment, and material necessary to complete the work as specified.

REMOVAL OF LIGHTING UNIT, SALVAGE

Description: This work shall consist of the removal and salvage of existing lighting units in accordance with Section 842 of the Standard Specifications and the following additions or exceptions.

General: Removal of existing lighting units shall include the pole, arm, luminaire, pole wiring, and associated hardware and appurtenances. Removal of existing light pole foundations will be paid for separately.

Existing lighting units shall remain the property of the Department and shall be delivered by the Contractor to a location designated by the Engineer. The Contractor shall remove, store, and protect the salvaged lighting units in a workmanlike manner to avoid damaging, denting, or scratching the material. Any repair or touch-up required shall be performed by the Contractor using a method approved by the Engineer and at the Contractor's expense. Any materials damaged beyond repair by the Contractor shall be replaced as determined by the Engineer and at the Contractor's expense.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for REMOVAL OF LIGHTING UNIT, SALVAGE, which price shall include all labor, equipment, and material necessary to complete the work as specified.

REMOVAL OF POLE FOUNDATION

Description: This work shall consist of the removal and disposal of existing steel helix foundations in accordance with Section 842 of the Standard Specifications and the following additions or exceptions.

General: Steel helix foundations shall be removed and disposed of by the Contractor in accordance with Article 202.03 of the Standard Specifications.

Portions of the existing cables and conduits that interfere in any way with the proposed construction shall be removed. Existing cables that do not interfere with the proposed construction shall be abandoned in place unless otherwise directed by the Engineer. Existing conduits that do not interfere with the proposed construction shall be capped and abandoned in place unless otherwise directed by the Engineer. Removal of the existing cables and conduits shall be included in the cost of Removal of Pole Foundation, and no additional compensation will be allowed.

Voids created by the removals shall be backfilled with controlled low-strength material unless otherwise directed by the Engineer. Turf areas disturbed during removal operations shall be restored with topsoil and sod unless otherwise directed by the Engineer. All excavation, backfill, controlled low-strength material, topsoil, and sod required to remove the existing foundation and restore the disturbed area shall be included in the cost of Removal of Pole Foundation, and no additional compensation will be allowed.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for REMOVAL OF POLE FOUNDATION, which price shall include all labor, equipment, and material necessary to complete the work as specified.

RELOCATE EXISTING LIGHTING UNIT

Description: This work shall consist of the relocation of existing lighting units, including the pole, arm, luminaire, pole wiring, and associated hardware and appurtenances, in accordance with Section 844 of the Standard Specifications and the following additions or exceptions.

General: Revise Article 844.01 of the Standard Specifications to read: **“Description. This work shall consist of removing an existing lighting unit and reinstalling the lighting unit on a proposed foundation at the locations designated on the plans.”**

Revise the first paragraph of Article 844.03(b) of the Standard Specifications to read: **“Reinstallation. The lighting unit shall be installed on the proposed foundation. The electric cables shall be connected to the power supply cables.”**

Steel helix foundations shall be provided for reinstallation of the lighting units. Steel helix foundations will be paid for separately.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for RELOCATE EXISTING LIGHTING UNIT, which price shall include all labor, equipment, and material necessary to complete the work as specified, including all reconnection of pole wiring to power supply wiring.

REMOVAL OF LIGHTING LUMINAIRE, SALVAGE

Description: This work shall consist of the removal and salvage of existing lighting luminaires in accordance with Section 842 of the Standard Specifications and the following additions or exceptions.

General: Existing lighting luminaires shall remain the property of the Department and shall be delivered by the Contractor to a location designated by the Engineer. The Contractor shall remove, store, and protect the salvaged lighting luminaires in a workmanlike manner to avoid damaging, denting, or scratching the material. Any repair or touch-up required shall be performed by the Contractor using a method approved by the Engineer and at the Contractor’s expense. Any materials damaged beyond repair by the Contractor shall be replaced as determined by the Engineer and at the Contractor’s expense.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for REMOVAL OF LIGHTING LUMINAIRE, SALVAGE, which price shall include all labor, equipment, and material necessary to complete the work as specified.

JUNCTION BOX (SPECIAL)

Description: This work shall consist of furnishing and installing a junction box in accordance with Section 815 of the Standard Specifications and the following additions or exceptions..

The junction box shall be composite concrete and manufactured by CDR Systems or Armorcast Products Company. The junction box dimensions shall be 12”W x 12”L x 12”D with flared walls. The junction box cover shall be constructed of the same material as the junction box and shall have the words “STREET LIGHTING” cast into the cover. The junction box cover and collar shall be standard concrete grey color in sidewalks and shall be the manufacturer’s dark green color in grass areas.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for JUNCTION BOX (SPECIAL), which price shall include all labor, equipment, and material necessary to complete the work as specified.

LIGHT POLE FOUNDATION, SPECIAL

Description: This work shall consist of furnishing and installing a metal light pole foundation in accordance with Section 836 of the Standard Specifications, the details of Highway Standard 836001, the details in the plans, and the following additions or exceptions.

General: The bolt circle diameter of the metal foundation shall accommodate the bolt circle diameter of the light pole to be installed on the foundation. The top plate dimensions of the metal foundation shall accommodate the bolt circle diameter and the anchor base dimensions of the light pole to be installed on the foundation.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for LIGHT POLE FOUNDATION, SPECIAL, which price shall include all labor, equipment, and material necessary to complete the work as specified, including the anchor bolts.

STATUS OF UTILITY SHEETS

The following utilities are involved in this project. The utility companies have provided the estimated dates.

<u>Name & Address of Utility</u>	<u>Type & Location</u>	<u>Estimated Date Relocation Completed</u>
Village of Tilton 1001 Tilton Road Tilton, IL 61833 (217) 477-0800	Storm/Sanitary Sewer US 150/IL Route 1	Adjusted as part of project
AMEREN IP 115 E. Voorhees St. Suite B MC Q-15 Danville, IL 61832 (217) 431-9703	Power and Gas Overhead Electric – 16 th St and US 150/IL Route 1 Intersection Gas - 16 th St and US 150/IL Route 1 Intersection, East side of Route 1	Spring 2018
Aqua Illinois, Inc. 332 N. Gilbert St. P.O. 1130 Danville, IL 61834 (217) 442-3063 Ext. 58131	Water West side of Route 1	No Conflict
AT&T 201 S. Neil St Champaign, IL 61820 (217) 398-7979	Telecommunications 16 th St and US 150/IL Route 1 Intersection, East side of Route 1	Spring 2018
Comcast 303 E. Fairlawn Dr. Urbana, IL 61801 (217) 202-2644	Telecommunications 16 th St and US 150/IL Route 1 Intersection	Spring 2018
Metro Communications Company, Inc. 8 S. Washington St Suite 200 Sullivan, IL 61951 (217) 728-2827	Telecommunications 16 th St and US 150/IL Route 1 Intersection, East side of Route 1	Spring 2018
NewWave Communications 1219 N. State St Westville, IL 61883 (217) 663-9844	Telecommunications West side of Route 1 from Southgate to 16 th Street.	No Conflict

The above represents the best information of the Department and is only included for the convenience of the bidder. The applicable provisions of Sections 102, 103, and Articles 105.07, 107.20, 107.37-.40, and 108.02 of the Standard Specifications for Road and Bridge Construction shall apply.

The estimated utility relocation dates should be part of the progress schedule submitted by the contractor. If any utility adjustments or relocations have not been completed by the above dates specified and when required by the contractor's operations after these dates, the contractor should notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's critical path schedule is affected.

Toll Free J.U.L.I.E. Telephone Number (800) 892-0123 or 811
* = J.U.L.I.E. Member

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

SPECIAL PROVISION
FOR
INSURANCE

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

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

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

Village of Tilton

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

ADJUSTING FRAMES AND GRATES (BDE)

Effective: April 1, 2017

Add the following to Article 602.02 of the Standard Specifications:

- “(s) High Density Expanded Polystyrene Adjusting Rings
with Polyurea Coating (Note 4) 1043.04
(t) Expanded Polypropylene (EPP) Adjusting Rings (Note 5) 1043.05

Note 4. High density expanded polystyrene adjusting rings with polyurea coating shall meet the design load requirements of AASHTO HS20/25. The rings may be used to adjust the frames and grates of drainage and utility structures up to a maximum of 6 in. (150 mm). They shall be installed and sealed underneath the frames according to the manufacturer’s specifications.

Note 5. Riser rings fabricated from EPP may be used to adjust the frames and grates of drainage and utility structures up to a maximum of 6 in. (150 mm). An adhesive meeting ASTM C 920, Type S, Grade N5, Class 25 shall be used with EPP adjustment rings. The top ring of the adjustment stack shall be a finish ring with grooves on the lower surface and flat upper surface. The joints between all manhole adjustment rings and the frame and cover shall be sealed using the approved adhesive. In lieu of the use of an adhesive, an internal or external mechanical frame-chimney seal may be used for watertight installation. EPP adjustment rings shall not be used with heat shrinkable infiltration barriers.”

Add the following to Section 1043 of the Standard Specifications:

“1043.04 High Density Expanded Polystyrene Adjusting Rings with Polyurea Coating. High density expanded polystyrene adjustment rings with polyurea coating shall be designed and tested to meet or exceed an HS25 wheel load according to the AASHTO Standard Specifications for Highway Bridges (AASHTO M306 HS-25). The raw material suppliers shall provide certifications of quality or testing using the following ASTM standards, and upon request, certify that only virgin material was used in the manufacturing of the expanded polystyrene rings.

Physical Property	Test Standard	Value	
		3.0 lb/cu ft	4.5 lb/cu ft
Compression Resistance at 10% deformation	ASTM D 1621	50 - 70	70 - 90
at 5% deformation		45 - 60	60 - 80
at 2% deformation		15 - 20	20 - 40
Flexural Strength	ASTM D 790	90 - 120	130 - 200
Water Absorption	ASTM D 570	2.0%	1.7%
Coefficient of Linear Expansion	ASTM D 696	2.70E-06 in./in./°F	2.80E-06 in./in./°F
Sheer Strength	ASTM D 732	55	80

Tensile Strength	ASTM D 1623	70 - 90	130 - 140
Water Vapor Transmission	ASTM C 355	0.82 – 0.86 perm – in.	

High density expanded polystyrene adjustment rings with polyurea coating shall have no void areas, cracks, or tears. The actual diameter or length shall not vary more than 0.125 in. (3 mm) from the specified diameter or length. Variations in height are limited to ± 0.063 in. (± 1.6 mm). Variations shall not exceed 0.25 in. (6 mm) from flat (dish, bow, or convoluting edge) or 0.125 in. (3 mm) for bulges or dips in the surface.

1043.05 Expanded Polypropylene (EPP) Adjusting Rings. The EPP adjusting rings shall be manufactured using a high compression molding process to produce a minimum finished density of 7.5 lb/cu ft (120 g/l). The EPP rings shall be made of materials meeting ASTM D 3575 and ASTM D 4819-13. The grade adjustments shall be designed and tested according to the AASHTO Standard Specifications for Highway Bridges (AASHTO M 306 HS-25).

Grade rings shall contain upper and lower keyways (tongue and groove) for proper vertical alignment and sealing. The top ring, for use directly beneath the cast iron frame, shall have keyways (grooves) on the lower surface with a flat upper surface.

Adhesive or sealant used for watertight installation of the manhole grade adjustment rings shall meet ASTM C 920, Type S, Grade NS, Class 25, Uses NT, T, M, G, A, and O.

EPP adjustment rings shall have no void areas, cracks, or tears. The actual diameter or length shall not vary more than 0.125 in. (3 mm) from the specified diameter or length. Variations in height are limited to ± 0.063 in. (± 1.6 mm). Variations shall not exceed 0.25 in. (6 mm) from flat (dish, bow, or convoluting edge) or 0.125 in. (3 mm) for bulges or dips in the surface.”

80382

BUTT JOINTS (BDE)

Effective: July 1, 2016

Add the following to Article 406.08 of the Standard Specifications.

“(c) Temporary Plastic Ramps. Temporary plastic ramps shall be made of high density polyethylene meeting the properties listed below. Temporary plastic ramps shall only be used on roadways with permanent posted speeds of 55 mph or less. The ramps shall have a minimum taper rate of 1:30 (V:H). The leading edge of the plastic ramp shall have a maximum thickness of 1/4 in. (6 mm) and the trailing edge shall match the height of the adjacent pavement \pm 1/4 in. (\pm 6 mm).

The ramp will be accepted by certification. The Contractor shall furnish a certification from the manufacturer stating the temporary plastic ramp meets the following requirements.

Physical Property	Test Method	Requirement
Melt Index	ASTM D 1238	8.2 g/10 minutes
Density	ASTM D 1505	0.965 g/cc
Tensile Strength @ Break	ASTM D 638	2223 psi (15 MPa)
Tensile Strength @ Yield	ASTM D 638	4110 psi (28 MPa)
Elongation @ Yield ^{1/} , percent	ASTM D 638	7.3 min.
Durometer Hardness, Shore D	ASTM D 2240	65
Heat Deflection Temperature, 66 psi	ASTM D 648	176 °F (80 °C)
Low Temperature Brittleness, F ₅₀	ASTM D 746	<-105 °F (<-76 °C)

1/ Crosshead speed -2 in./minute

The temporary plastic ramps shall be installed according to the manufacturer's specifications and fastened with anchors meeting the manufacturer's recommendations. Temporary plastic ramps that fail to stay in place or create a traffic hazard shall be replaced immediately with temporary HMA ramps at the Contractor's expense.”

80366

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

Revise Article 107.40(b) of the Standard Specifications to read:

“(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

- (1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.
- (2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.
- (3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days.”

Revise Article 107.40(c) of the Standard Specifications to read:

“(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

- (1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

- (2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the Contractor’s yard or another job and the cost to re-mobilize, whichever is less.

Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

- (3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13.”

Revise Article 108.04(b) of the Standard Specifications to read:

“(b) No working day will be charged under the following conditions.

- (1) When adverse weather prevents work on the controlling item.
- (2) When job conditions due to recent weather prevent work on the controlling item.
- (3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.
- (4) When delays caused by utility or railroad adjustments prevent work on the controlling item.
- (5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.
- (6) When any condition over which the Contractor has no control prevents work on the controlling item.”

Revise Article 109.09(f) of the Standard Specifications to read:

- “(f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead

other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited.”

Add the following to Section 109 of the Standard Specifications.

“109.13 Payment for Contract Delay. Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

- (a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.
- (b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.
 - (1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to \$5,000,000	One Project Superintendent
Over \$ 5,000,000 - up to \$25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over \$25,000,000 - up to \$50,000,000	One Project Manager, One Project Superintendent, One Engineer, and

	One Clerk
Over \$50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid. For working day contracts the payment will be made according to Article 109.04. For completion date contracts, an adjustment will be determined as follows.

Extended Traffic Control occurs between April 1 and November 30:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times (\% / 100 \times \text{CUP} / \text{OCT})$$

Extended Traffic Control occurs between December 1 and March 31:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times 1.5 (\% / 100 \times \text{CUP} / \text{OCT})$$

Where: TE = Duration of approved time extension in calendar days.

% = Percent maintenance for the traffic control, % (see table below).

CUP = Contract unit price for the traffic control pay item in place during the delay.

OCT = Original contract time in calendar days.

Original Contract Amount	Percent Maintenance
Up to \$2,000,000	65%
\$2,000,000 to \$10,000,000	75%
\$10,000,000 to \$20,000,000	85%
Over \$20,000,000	90%

When an ETCP adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

CONCRETE MIX DESIGN – DEPARTMENT PROVIDED (BDE)

Effective: January 1, 2012

| Revised: April 1, 2016

| For the concrete mix design requirements in Article 1020.05(a) of the Standard Specifications, the Contractor has the option to request the Engineer determine mix design material proportions for Class PV, PP, RR, BS, DS, SC, and SI concrete. A single mix design for each class of concrete will be provided. Acceptance by the Contractor to use the mix design developed by the Engineer shall not relieve the Contractor from meeting specification requirements.

80277

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (DBE)

Effective: September 1, 2000

Revised: April 2, 2018

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a

good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 6.00 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents that enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents that a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:

<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

BIDDING PROCEDURES. Compliance with this Special Provision is required prior to the award of the contract and the failure of the low bidder to comply will render the bid not responsive.

In order to assure the timely award of the contract, the low bidder shall submit:

- (a) The bidder shall submit a DBE Utilization Plan on completed Department forms SBE 2025 and 2026.
 - (1) The final Utilization Plan must be submitted within five calendar days after the date of the letting in accordance with subsection (a)(2) of Bidding Procedures herein.

- (2) To meet the five day requirement, the bidder may send the Utilization Plan electronically by scanning and sending to DOT.DBE.UP@illinois.gov or faxing to (217) 785-1524. The subject line must include the bid Item Number and the Letting date. The Utilization Plan should be sent as one .pdf file, rather than multiple files and emails for the same Item Number. It is the responsibility of the bidder to obtain confirmation of email or fax delivery.

Alternatively, the Utilization Plan may be sent by certified mail or delivery service within the five calendar day period. If a question arises concerning the mailing date of a Utilization Plan, the mailing date will be established by the U.S. Postal Service postmark on the certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service when the Utilization Plan is received by the Department. It is the responsibility of the bidder to ensure the postmark or receipt date is affixed within the five days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Utilization Plan is to be submitted to:

Illinois Department of Transportation
Bureau of Small Business Enterprises
Contract Compliance Section
2300 South Dirksen Parkway, Room 319
Springfield, Illinois 62764

The Department will not accept a Utilization Plan if it does not meet the five day submittal requirement and the bid will be declared not responsive. In the event the bid is declared not responsive due to a failure to submit a Utilization Plan or failure to comply with the bidding procedures set forth herein, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration.

- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number, and telefax number of a responsible official of the bidder designated for purposes of notification of Utilization Plan approval or disapproval under the procedures of this Special Provision.
- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. For bidding purposes, submission of the completed SBE 2025 forms, signed by the DBEs and scanned or faxed to the bidder will be acceptable as long as the original is available and provided upon request. All elements of information indicated on the said form shall be provided, including but not limited to the following:

- (1) The names and addresses of DBE firms that will participate in the contract;
- (2) A description, including pay item numbers, of the work each DBE will perform;
- (3) The dollar amount of the participation of each DBE firm participating. The dollar amount of participation for identified work shall specifically state the quantity, unit price, and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;
- (4) DBE Participation Commitment Statements, form SBE 2025, signed by the bidder and each participating DBE firm documenting the commitment to use the DBE subcontractors whose participation is submitted to meet the contract goal;
- (5) If the bidder is a joint venture comprised of DBE companies and non-DBE companies, the Utilization Plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s); and,
- (6) If the contract goal is not met, evidence of good faith efforts; 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.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan submitted by the apparent successful bidder is approved. All information submitted by the bidder must be complete, accurate and adequately document that enough DBE participation has been obtained or document that good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. The Utilization Plan will not be approved by the Department if the Utilization Plan does not document sufficient DBE participation to meet the contract goal unless the apparent successful bidder documented in the Utilization Plan that it made a good faith effort to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts, in other words, efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors

are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.

- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
- (2) Selecting portions of the work to be performed by DBE companies 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 prime Contractor might otherwise prefer to perform these work items with its own forces.
- (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
 - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with subsection (c)(6) of the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
 - (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
 - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
 - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines that the apparent successful bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification shall include a statement of reasons for the determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period in order to cure the deficiency.
- (c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217) 785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The determination shall become final if a request is not made and delivered. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the

Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
 - (1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
 - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission 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 submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.
- (b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, then a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

- (c) SUBCONTRACT. The Contractor must provide DBE subcontracts to IDOT upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.
- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:
- (1) That the replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
 - (2) That the DBE is aware that its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
 - (3) That the DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.
- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor,

with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the prime Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.
- (6) You have determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated, or fails to complete its work on the Contract for any reason the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department shall provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

- (f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than thirty calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.
- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

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 Inserter1103.20”

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

EQUIPMENT PARKING AND STORAGE (BDE)

Effective: November 1, 2017

Replace the first paragraph of Article 701.11 of the Standard Specifications with the following.

“701.11 Equipment Parking and Storage. During working hours, all vehicles and/or nonoperating equipment which are parked, two hours or less, shall be parked at least 8 ft (2.5 m) from the open traffic lane. For other periods of time during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored as follows.

- (a) When the project has adequate right-of-way, vehicles, materials, and equipment shall be located a minimum of 30 ft (9 m) from the pavement.
- (b) When adequate right-of-way does not exist, vehicles, materials, and equipment shall be located a minimum of 15 ft (4.5 m) from the edge of any pavement open to traffic.
- (c) Behind temporary concrete barrier, vehicles, materials, and equipment shall be located a minimum of 24 in. (600 mm) behind free standing barrier or a minimum of 6 in. (150 mm) behind barrier that is either pinned or restrained according to Article 704.04. The 24 in. or 6 in. measurement shall be from the base of the non-traffic side of the barrier.
- (d) Behind other man-made or natural barriers meeting the approval of the Engineer.”

80388

HOT-MIX ASPHALT – TACK COAT (BDE)

Effective: November 1, 2016

Revise Article 1032.06(a) of the Standard Specifications to read:

“(a) Anionic Emulsified Asphalt. Anionic emulsified asphalts shall be according to AASHTO M 140. SS-1h emulsions used as a tack coat shall have the cement mixing test waived.”

80376

LIGHTS ON BARRICADES (BDE)

Effective: January 1, 2018

Revise Article 701.16 of the Standard Specifications to read:

“701.16 Lights. Lights shall be used on devices as required in the plans, the traffic control plan, and the following table.

Circumstance	Lights Required
Daylight operations	None
First two warning signs on each approach to the work involving a nighttime lane closure and “ROUGH GROOVED SURFACE” (W8-I107) signs	Flashing mono-directional lights
Devices delineating isolated obstacles, excavations, or hazards at night (Does not apply to patching)	Flashing bi-directional lights
Devices delineating obstacles, excavations, or hazards exceeding 100 ft (30 m) in length at night (Does not apply to widening)	Steady burn bi-directional lights
Channelizing devices for nighttime lane closures on two-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads separating opposing directions of traffic	None
Channelizing devices for nighttime along lane shifts on multilane roads	Steady burn mono-directional lights
Channelizing devices for night time along lane shifts on two lane roads	Steady burn bi-directional lights
Devices in nighttime lane closure tapers on Standards 701316 and 701321	Steady burn bi-directional lights
Devices in nighttime lane closure tapers	Steady burn mono-directional lights
Devices delineating a widening trench	None
Devices delineating patches at night on roadways with an ADT less than 25,000	None
Devices delineating patches at night on roadways with an ADT of 25,000 or more	None

Batteries for the lights shall be replaced on a group basis at such times as may be specified by the Engineer.”

Delete the fourth sentence of the first paragraph of Article 701.17(c)(2) of the Standard Specifications.

Revise the first paragraph of Article 603.07 of the Standard Specifications to read:

“603.07 Protection Under Traffic. After the casting has been adjusted and Class SI concrete has been placed, the work shall be protected by a barricade for at least 72 hours.”

80392

PAVEMENT MARKING REMOVAL (BDE)

Effective: July 1, 2016

Revise Article 783.02 of the Standard Specifications to read:

“783.02 Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Grinders (Note 1)	
(b) Water Blaster with Vacuum Recovery	1101.12

Note 1. Grinding equipment shall be approved by the Engineer.”

Revise the first paragraph of Article 783.03 of the Standard Specifications to read:

“783.03 Removal of Conflicting Markings. Existing pavement markings that conflict with revised traffic patterns shall be removed. If darkness or inclement weather prohibits the removal operations, such operations shall be resumed the next morning or when weather permits. In the event of removal equipment failure, such equipment shall be repaired, replaced, or leased so removal operations can be resumed within 24 hours.”

Revise the first and second sentences of the first paragraph of Article 783.03(a) of the Standard Specifications to read:

“The existing pavement markings shall be removed by the method specified and in a manner that does not materially damage the surface or texture of the pavement or surfacing. Small particles of tightly adhering existing markings may remain in place, if in the opinion of the Engineer, complete removal of the small particles will result in pavement surface damage.”

Revise the first paragraph of Article 783.04 of the Standard Specifications to read:

“783.04 Cleaning. The roadway surface shall be cleaned of debris or any other deleterious material by the use of compressed air or water blast.”

Revise the first paragraph of Article 783.06 of the Standard Specifications to read:

“783.06 Basis of Payment. This work will be paid for at the contract unit price per each for RAISED REFLECTIVE PAVEMENT MARKER REMOVAL, or at the contract unit price per square foot (square meter) for PAVEMENT MARKING REMOVAL – GRINDING and/or PAVEMENT MARKING REMOVAL – WATER BLASTING.”

Delete Article 1101.13 from the Standard Specifications.

80371

PAYMENTS TO SUBCONTRACTORS (BDE)

Effective: November 2, 2017

Add the following to the end of the fourth paragraph of Article 109.11 of the Standard Specifications:

“If reasonable cause is asserted, written notice shall be provided to the applicable subcontractor and/or material supplier and the Engineer within five days of the Contractor receiving payment. The written notice shall identify the contract number, the subcontract or material purchase agreement, a detailed reason for refusal, the value of payment being withheld, and the specific remedial actions required of the subcontractor and/or material supplier so that payment can be made.”

80390

PORTABLE CHANGEABLE MESSAGE SIGNS (BDE)

Effective: November 1, 2016

Revised: April 1, 2017

Revise the second paragraph of Article 701.20(h) of the Standard Specifications to read:

“For all other portable changeable message signs, this work will be paid for at the contract unit price per calendar day for each sign as CHANGEABLE MESSAGE SIGN.”

Revise this second sentence of the first paragraph of Article 1106.02(i) of the Standard Specifications to read:

“The message panel shall be a minimum of 7 ft (2.1 m) above the edge of pavement in urban areas and a minimum of 5 ft (1.5 m) above the edge of pavement in rural areas, present a level appearance, and be capable of displaying up to eight characters in each of three lines at a time.”

80377

PORTLAND CEMENT CONCRETE (BDE)

Effective: November 1, 2017

Revise the Air Content % of Class PP Concrete in Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

"TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA		
Class of Conc.	Use	Air Content %
PP	Pavement Patching Bridge Deck Patching (10)	
	PP-1	4.0 - 8.0"
	PP-2	
	PP-3	
	PP-4	
	PP-5	

Revise Note (4) at the end of Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

“(4) For all classes of concrete, the maximum slump may be increased to 7 in (175 mm) when a high range water-reducing admixture is used. For Class SC, the maximum slump may be increased to 8 in. (200 mm). For Class PS, the maximum slump may be increased to 8 1/2 in. (215 mm) if the high range water-reducing admixture is the polycarboxylate type.”

80389

PORTLAND CEMENT CONCRETE SIDEWALK (BDE)

Effective: August 1, 2017

Revise the first paragraph of Article 424.12 of the Standard Specifications to read:

“424.12 Method of Measurement. This work will be measured for payment in place and the area computed in square feet (square meters). Curb ramps, including side curbs and side flares, will be measured for payment as sidewalk. No deduction will be made for detectable warnings located within the ramp.”

80385

PROGRESS PAYMENTS (BDE)

Effective: November 2, 2013

Revise Article 109.07(a) of the Standard Specifications to read:

“(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the quantity of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1000.00 will be approved for payment other than the final payment.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics' Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610), progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved.”

80328

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (BDE)

Effective: November 1, 2012

Revise: January 1, 2018

Revise Section 1031 of the Standard Specifications to read:

SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES

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

- (a) Reclaimed Asphalt Pavement (RAP). RAP is the material 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). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Central Bureau of Materials approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 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. All 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. (40 mm)
IL-9.5	3/4 in. (20 mm)
IL-4.75	1/2 in. (13 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. All 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 Central 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 %.

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 shall not exceed the amounts listed in the Max RAP/RAS ABR table listed below for the given Ndesign.

RAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

HMA Mixtures <i>1/, 2/</i>	RAP/RAS Maximum ABR %			
	Ndesign	Binder/Leveling Binder	Surface	Polymer Modified
30	30	30	10	10
50	25	15	10	10
70	15	10	10	10
90	10	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 FRAP/RAS table listed below for the given Ndesign.

FRAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

HMA Mixtures <i>1/, 2/</i>	FRAP/RAS Maximum ABR %		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified ^{3/, 4/}
30	50	40	10
50	40	35	10
70	40	30	10
90	40	30	10

- 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).
- 3/ For SMA the FRAP/RAS ABR shall not exceed 20 percent.
- 4/ For IL-4.75 mix the FRAP/RAS ABR shall not exceed 30 percent.

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 material as a percent of the total mix to the nearest 0.1 percent.
- h. Aggregate and RAP/FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAP/FRAP are printed in 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 current Central 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

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

“109.14 Subcontractor and Disadvantaged Business Enterprise Payment Reporting.
The Contractor shall report all payments made to the following parties:

- (a) first tier subcontractors;
- (b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;
- (c) material suppliers or trucking firms that are part of the Contractor’s submitted DBE utilization plan.

The report shall be made through the Department’s on-line subcontractor payment reporting system within 21 days of making the payment.”

80397

SUBCONTRACTOR MOBILILATION PAYMENTS (BDE)

Effective: November 2, 2017

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

“This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor’s work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%”

80391

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

REVISIONS TO THE ILLINOIS PREVAILING WAGE RATES

The Prevailing rates of wages are included in the Contract proposals which are subject to Check Sheet #5 of the Supplemental Specifications and Recurring Special Provisions. The rates have been ascertained and certified by the Illinois Department of Labor for the locality in which the work is to be performed and for each craft or type of work or mechanic needed to execute the work of the Contract. As required by Prevailing Wage Act (820 ILCS 130/0.01, et seq.) and Check Sheet #5 of the Contract, not less than the rates of wages ascertained by the Illinois Department of Labor and as revised during the performance of a Contract shall be paid to all laborers, workers and mechanics performing work under the Contract. Post the scale of wages in a prominent and easily accessible place at the site of work.

If the Illinois Department of Labor revises the prevailing rates of wages to be paid as listed in the specification of rates, the contractor shall post the revised rates of wages and shall pay not less than the revised rates of wages. Current wage rate information shall be obtained by visiting the Illinois Department of Labor web site at <http://www.state.il.us/agency/idol/> or by calling 312-793-2814. It is the responsibility of the contractor to review the rates applicable to the work of the contract at regular intervals in order to insure the timely payment of current rates. Provision of this information to the contractor by means of the Illinois Department of Labor web site satisfies the notification of revisions by the Department to the contractor pursuant to the Act, and the contractor agrees that no additional notice is required. The contractor shall notify each of its subcontractors of the revised rates of wages.