

**If you plan to submit a bid directly to the Department of Transportation**

**PREQUALIFICATION**

Any contractor who desires to become pre-qualified to bid on work advertised by IDOT must submit the properly completed pre-qualification forms to the Bureau of Construction no later than 4:30 p.m. prevailing time twenty-one days prior to the letting of interest. This pre-qualification requirement applies to first time contractors, contractors renewing expired ratings, contractors maintaining continuous pre-qualification or contractors requesting revised ratings. To be eligible to bid, existing pre-qualification ratings must be effective through the date of letting.

**REQUESTS FOR AUTHORIZATION TO BID**

Contractors downloading and/or ordering CD-ROM's and are wanting to bid on items included in a particular letting must submit the properly completed "Request for Authorization to Bid/or Not For Bid Status" (BDE 124INT) and the ORIGINAL, signed and notarized, "Affidavit of Availability" (BC 57) to the proper office no later than 4:30 p.m. prevailing time, three (3) days prior to the letting date.

**WHO CAN BID ?**

Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction.

**WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?** When a prospective prime bidder submits a "Request for Authorization to Bid/or Not For Bid Status" (BDE 124INT) he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial.

**ABOUT AUTHORIZATION TO BID:** Firms that have not received an authorization form within a reasonable time of complete and correct original document submittal should contact the department as to status. This is critical in the week before the letting. These documents must be received three days before the letting date. Firms unsure as to authorization status should call the Prequalification Section of the Bureau of Construction at the number listed at the end of these instructions.

**ADDENDA AND REVISIONS:** It is the contractor's responsibility to determine which, if any, addenda or revisions pertain to any project they may be bidding. Failure to incorporate all relevant addenda or revisions may cause the bid to be declared unacceptable.

Each addendum will be placed with the contract number. Addenda and revisions will also be placed on the Addendum/Revision Checklist and each subscription service subscriber will be notified by e-mail of each addendum and revision issued.

The Internet is the Department's primary way of doing business. The subscription server e-mails are an added courtesy the Department provides. It is suggested that bidder check IDOT's website <http://www.dot.il.gov/desenv/delett.html> before submitting final bid information.

**IDOT is not responsible for any e-mail related failures.**

Addenda Questions may be directed to the Contracts Office at (217)782-7806 or [D&Econtracts@dot.il.gov](mailto:D&Econtracts@dot.il.gov)

Technical Questions about downloading these files may be directed to Tim Garman (217)524-1642 or [garmantr@dot.il.gov](mailto:garmantr@dot.il.gov).

**WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?:** Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

**ABOUT SUBMITTING BIDS:** It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

**WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?**

<b>Questions Regarding</b>	<b>Call</b>
Prequalification and/or Authorization to Bid	(217)782-3413
Preparation and submittal of bids	(217)782-7806
Mailing of plans and proposals	(217)782-7806
Electronic plans and proposals	(217)524-1642

**ADDENDUMS AND REVISIONS TO THE PROPOSAL FORMS**

Planholders should verify that they have received and incorporated the addendum and/or revision prior to submitting their bid. Failure by the bidder to include an addendum could result in a bid being rejected as irregular.

# 59

RETURN WITH BID

Proposal Submitted By
Name
Address
City

## Letting September 21, 2007

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL  
(See instructions inside front cover)

### NOTICE TO PROSPECTIVE BIDDERS

This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.

(SEE INSTRUCTIONS ON THE INSIDE OF COVER)

# Notice To Bidders, Specifications, Proposal, Contract and Contract Bond



Illinois Department  
of Transportation

Springfield, Illinois 62764

Contract No. 60B01  
LAKE County  
Section 119R-2  
Route FAP 335  
Project ACHPP-HPP-NHF-335(9)  
District 1 Construction Funds

PLEASE MARK THE APPROPRIATE BOX BELOW:

- A Bid Bond is included.
- A Cashier's Check or a Certified Check is included

Prepared by

F

Checked by

(Printed by authority of the State of Illinois)

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## INSTRUCTIONS

**ABOUT IDOT PROPOSALS:** All proposals issued by IDOT are potential bidding proposals. Each proposal contains all Certifications and Affidavits, a Proposal Signature Sheet and a Proposal Bid Bond required for Prime Contractors to submit a bid after written **Authorization to Bid** has been issued by IDOT's Central Bureau of Construction.

**WHO CAN BID?:** Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction. To request authorization, a potential bidder must complete and submit Part B of the Request for Authorization to Bid/or Not For Bid Status form (BDE 124 INT) and submit an original Affidavit of Availability (BC 57).

**WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?:** When a prospective prime bidder submits a "Request for Proposal Forms and Plans" he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial. If a contractor has requested to bid but has not received a **Proposal Denial and/or Authorization Form**, they should contact the Central Bureau of Construction in advance of the letting date.

**WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?:** Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
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Mailing of CD-ROMS	217/782-7806

RETURN WITH BID



PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

1. Proposal of \_\_\_\_\_  
\_\_\_\_\_

Taxpayer Identification Number (Mandatory) \_\_\_\_\_

for the improvement identified and advertised for bids in the Invitation for Bids as:

**Contract No. 60B01  
LAKE County  
Section 119R-2  
Project ACHPP-HPP-NHF-335(9)  
Route FAP 335  
District 1 Construction Funds**

**Replacement of the bridge carrying IL Route 60 over Tri-State Tollway (SN 049-2012) pavement reconstruction along IL Route 60 from Riverwoods Road Boulevard to Saunders Road/Field Drive and resurfacing of the Riverwoods Road Boulevard intersection, located in Lake Forest and Mettawa.**

2. The undersigned bidder will furnish all labor, material and equipment to complete the above described project in a good and workmanlike manner as provided in the contract documents provided by the Department of Transportation. This proposal will become part of the contract and the terms and conditions contained in the contract documents shall govern performance and payments.

**RETURN WITH BID**

3. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned further declares that he/she has carefully examined the proposal, plans, specifications, form of contract and contract bond, and special provisions, and that he/she has inspected in detail the site of the proposed work, and that he/she has familiarized themselves with all of the local conditions affecting the contract and the detailed requirements of construction, and understands that in making this proposal he/she waives all right to plead any misunderstanding regarding the same.
  
4. **EXECUTION OF CONTRACT AND CONTRACT BOND.** The undersigned further agrees to execute a contract for this work and present the same to the department within fifteen (15) days after the contract has been mailed to him/her. The undersigned further agrees that he/she and his/her surety will execute and present within fifteen (15) days after the contract has been mailed to him/her contract bond satisfactory to and in the form prescribed by the Department of Transportation, in the penal sum of the full amount of the contract, guaranteeing the faithful performance of the work in accordance with the terms of the contract.
  
5. **PROPOSAL GUARANTY.** Accompanying this proposal is either a bid bond on the department form, executed by a corporate surety company satisfactory to the department, or a proposal guaranty check consisting of a bank cashier's check or a properly certified check for not less than 5 per cent of the amount bid or for the amount specified in the following schedule:

<u>Amount of Bid</u>		<u>Proposal Guaranty</u>	<u>Amount of Bid</u>		<u>Proposal Guaranty</u>	
Up to	\$5,000 .....	\$150	\$2,000,000	to	\$3,000,000 .....	\$100,000
\$5,000	to \$10,000 .....	\$300	\$3,000,000	to	\$5,000,000 .....	\$150,000
\$10,000	to \$50,000 .....	\$1,000	\$5,000,000	to	\$7,500,000 .....	\$250,000
\$50,000	to \$100,000 .....	\$3,000	\$7,500,000	to	\$10,000,000 .....	\$400,000
\$100,000	to \$150,000 .....	\$5,000	\$10,000,000	to	\$15,000,000 .....	\$500,000
\$150,000	to \$250,000 .....	\$7,500	\$15,000,000	to	\$20,000,000 .....	\$600,000
\$250,000	to \$500,000 .....	\$12,500	\$20,000,000	to	\$25,000,000 .....	\$700,000
\$500,000	to \$1,000,000 .....	\$25,000	\$25,000,000	to	\$30,000,000 .....	\$800,000
\$1,000,000	to \$1,500,000 .....	\$50,000	\$30,000,000	to	\$35,000,000 .....	\$900,000
\$1,500,000	to \$2,000,000 .....	\$75,000	over		\$35,000,000 .....	\$1,000,000

Bank cashier's checks or properly certified checks accompanying proposals shall be made payable to the Treasurer, State of Illinois, when the state is awarding authority; the county treasurer, when a county is the awarding authority; or the city, village, or town treasurer, when a city, village, or town is the awarding authority.

If a combination bid is submitted, the proposal guaranties which accompany the individual proposals making up the combination will be considered as also covering the combination bid.

The amount of the proposal guaranty check is \_\_\_\_\_ \$( \_\_\_\_\_ ). If this proposal is accepted and the undersigned shall fail to execute a contract bond as required herein, it is hereby agreed that the amount of the proposal guaranty shall become the property of the State of Illinois, and shall be considered as payment of damages due to delay and other causes suffered by the State because of the failure to execute said contract and contract bond; otherwise, the bid bond shall become void or the proposal guaranty check shall be returned to the undersigned.

**Attach Cashier's Check or Certified Check Here**

In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual proposal. If the guaranty check is placed in another proposal, state below where it may be found.

The proposal guaranty check will be found in the proposal for:

Item \_\_\_\_\_

Section No. \_\_\_\_\_

County \_\_\_\_\_

**Mark the proposal cover sheet as to the type of proposal guaranty submitted.**

BD 354 (Rev. 11/2001)

**RETURN WITH BID**

6. **COMBINATION BIDS.** The undersigned further agrees that if awarded the contract for the sections contained in the following combination, he/she will perform the work in accordance with the requirements of each individual proposal comprising the combination bid specified in the schedule below, and that the combination bid shall be prorated against each section in proportion to the bid submitted for the same. If an error is found to exist in the gross sum bid for one or more of the individual sections included in a combination, the combination bid shall be corrected as provided in the specifications.

**When a combination bid is submitted, the schedule below must be completed in each proposal comprising the combination.**

**If alternate bids are submitted for one or more of the sections comprising the combination, a combination bid must be submitted for each alternate.**

**Schedule of Combination Bids**

Combination No.	Sections Included in Combination	Combination Bid	
		Dollars	Cents

7. **SCHEDULE OF PRICES.** The undersigned bidder submits herewith, in accordance with the rules and instructions, a schedule of prices for the items of work for which bids are sought. The unit prices bid are in U.S. dollars and cents, and all extensions and summations have been made. The bidder understands that the quantities appearing in the bid schedule are approximate and are provided for the purpose of obtaining a gross sum for the comparison of bids. If there is an error in the extension of the unit prices, the unit prices shall govern. Payment to the contractor awarded the contract will be made only for actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as provided elsewhere in the contract.
8. **CERTIFICATE OF AUTHORITY.** The undersigned bidder, if a business organized under the laws of another State, assures the Department that it will furnish a copy of its certificate of authority to do business in the State of Illinois with the return of the executed contract and bond. Failure to furnish the certificate within the time provided for execution of an awarded contract may be cause for cancellation of the award and forfeiture of the proposal guaranty to the State.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 60B01

State Job # - C-91-230-06  
 PPS NBR - 1-74000-0100  
 County Name - LAKE - -  
 Code - 97 - -  
 District - 1 - -  
 Section Number - 119R-2

Project Number  
 ACHPP-HPP-NHF-0335/009/

Route  
 FAP 335

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
A2006714	T-QUERCUS MACR 1-3/4	EACH	70.000				
JI440010	CONC MED BAR BASE REM	FOOT	197.000				
JI606010	GUTTER TG-2	FOOT	2,284.000				
JS120809	PVC DRAIN PIPE 8	FOOT	454.000				
JS280020	MGMT EROS & SED CONTR	CAL MO	14.000				
JS280040	EROS SED CON CLN OUT	CU YD	479.000				
JS280050	SILT FENCE	FOOT	3,828.000				
JS280051	RE-ERECT SILT FENCE	FOOT	957.000				
JS280150	TEMP STAB STRAW MULCH	ACRE	4.750				
JS602030	CB TG-2	EACH	7.000				
JS811001	CON AS 3/4 GAL PVC CT	FOOT	20.000				
JS811002	CON AS 1 GAL PVC CT	FOOT	720.000				
JS821002	UNDERPS LUM 150 HP SV	EACH	12.000				
JS830030	TEMP WD POLE 60 CL 4	EACH	7.000				
JS830034	TEMP WDPLE 70CL3 15MA	EACH	12.000				

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JT637023	CONC MED BAR TRAN TVF	FOOT	46.000				
JT780A10	TEMP POLY PM T1 LN 4	FOOT	27,966.000				
JT780C10	TEMP POLY PM T1 LN 6	FOOT	3,572.000				
JT780D10	TEMP POLY PM T1 LN 8	FOOT	4,315.000				
JT780F10	TEMP POLY PM T1 LN 12	FOOT	513.000				
JT780G10	TEMP POLY PM T1 LN 24	FOOT	248.000				
JT780H10	TEMP POLY PM L/N/S TI	SQ FT	1,016.000				
XX002113	TEMP LIGHT CONTROLLER	EACH	1.000				
XX002856	RE-OPTIMIZE TR SIG SY	L SUM	1.000				
XX003418	ELCBL C SERV 4 2C	FOOT	482.000				
XX003686	REM EX CONC END SEC	EACH	15.000				
XX005631	UTILITY STRUCTURE TBA	EACH	1.000				
XX006767	LIQ FLEX MET CON 3/4	FOOT	20.000				
XX006768	MAINTAIN LIGHTING SYS	L SUM	1.000				
XX006842	AGG FOR TEMP ACCESS	TON	4.000				

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XX006937	GROUND ROD 5/8 X 10	EACH	37.000				
XX011700	WATER MAIN FITTINGS	POUND	40.000				
XX172700	MAN TA 8 DIA T1F CL	EACH	1.000				
X0320816	SLEEPER SLAB	SQ YD	295.000				
X0320870	BRACED EXCAVATION	CU YD	4,424.000				
X0321556	SANITARY MANHOLE ADJ	EACH	2.000				
X0321598	MH TA 6D W/2 T1FCL RP	EACH	2.000				
X0322033	STORM SEW WM REQ 12	FOOT	729.000				
X0322034	STORM SEW WM REQ 15	FOOT	11.000				
X0322054	REM PRC FL END SEC	EACH	20.000				
X0322092	STORM SEW WM REQ 48	FOOT	234.000				
X0322256	TEMP INFO SIGNING	SQ FT	1,074.000				
X0322671	STAB CONSTR ENTRANCE	SQ YD	2,310.000				
X0322695	MAST ARM STL ST LT 12	EACH	2.000				
X0322923	SEGMENT CONC BLK WALL	SQ FT	3,591.000				

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X0323426	SED CONT DR ST INL CL	EACH	298.000				
X0323670	PREFORM DETECT LOOP	FOOT	623.000				
X0323792	LTG CONTR 1D CONS TY	EACH	2.000				
X0323830	DRAINAGE SCUPPR DS-11	EACH	24.000				
X0323973	SED CONT SILT FENCE	FOOT	7,101.000				
X0323974	SED CONT SILT FN MAIN	FOOT	1,776.000				
X0323988	TEMP SOIL RETEN SYSTM	SQ FT	2,912.000				
X0324872	CIP T/D WSS RAMP DISB	SQ FT	103.000				
X0325737	TEMP TR SIGNAL TIMING	EACH	4.000				
X0325828	REL EX SCAM CAB&POLE	EACH	3.000				
X0325829	STL MAAAP DMA 44 & 52	EACH	1.000				
X0325830	STL MAAAP DMA 48 & 55	EACH	1.000				
X0325831	STAB SUB-BASE HMA 3"	SQ YD	7,681.000				
X0325832	CON ATS 1.5 GALVS PVC	FOOT	125.000				
X0325833	WICK DRAINS	FOOT	18,130.000				

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X0325834	HOR STRIP DRAINS	FOOT	2,970.000				
X0325863	ABAN WM CUT & REMOV	FOOT	400.000				
X0712400	TEMP PAVEMENT	SQ YD	13,547.000				
X4021000	TEMP ACCESS- PRIV ENT	EACH	1.000				
X4200534	HES PCC PVT 10 SPL	SQ YD	672.000				
X5121800	PERM STEEL SHT PILING	SQ FT	528.000				
X6700410	ENGR FLD OFF A SPL	CAL MO	14.000				
X8050010	SERV INSTALL GRND MT	EACH	2.000				
X8050015	SERV INSTALL POLE MT	EACH	1.000				
X8510200	PAINT TRAF SIG EQUIP	L SUM	1.000				
X8620020	UNINTER POWER SUPPLY	EACH	4.000				
X8730027	ELCBL C GROUND 6 1C	FOOT	5,081.000				
X8730250	ELCBL C 20 3C TW SH	FOOT	3,346.000				
Z0001050	AGG SUBGRADE 12	SQ YD	50,156.000				
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000				

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Z0030250	IMP ATTN TEMP NRD TL3	EACH	6.000				
Z0030350	IMP ATTN REL NRD TL3	EACH	11.000				
Z0076600	TRAINEES	HOUR	5,000.000		0.800		4,000.000
20100110	TREE REMOV 6-15	UNIT	513.000				
20100210	TREE REMOV OVER 15	UNIT	38.000				
20101000	TEMPORARY FENCE	FOOT	600.000				
20200100	EARTH EXCAVATION	CU YD	14,035.000				
20200410	EARTH EXCAVATION SPL	CU YD	6,860.000				
20201200	REM & DISP UNS MATL	CU YD	19,741.000				
20400800	FURNISHED EXCAV	CU YD	70,065.000				
20700400	POROUS GRAN EMB SPEC	CU YD	734.000				
20700420	POROUS GRAN EMB SUBGR	CU YD	4,185.000				
20800150	TRENCH BACKFILL	CU YD	3,135.000				
21001000	GEOTECH FAB F/GR STAB	SQ YD	44,756.000				
21101615	TOPSOIL F & P 4	SQ YD	59,480.000				

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25000210	SEEDING CL 2A	ACRE	5.250				
25000300	SEEDING CL 3	ACRE	5.250				
25000312	SEEDING CL 4A	ACRE	1.500				
25000400	NITROGEN FERT NUTR	POUND	1,127.000				
25000500	PHOSPHORUS FERT NUTR	POUND	1,127.000				
25000600	POTASSIUM FERT NUTR	POUND	1,127.000				
25100630	EROSION CONTR BLANKET	SQ YD	82,406.000				
25200100	SODDING	SQ YD	3,948.000				
25200200	SUPPLE WATERING	UNIT	2,966.000				
28000250	TEMP EROS CONTR SEED	POUND	652.000				
28000300	TEMP DITCH CHECKS	EACH	57.000				
28000500	INLET & PIPE PROTECT	EACH	14.000				
28000510	INLET FILTERS	EACH	149.000				
28100107	STONE RIPRAP CL A4	SQ YD	206.000				
28200200	FILTER FABRIC	SQ YD	206.000				

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31101200	SUB GRAN MAT B 4	SQ YD	262.000				
35300505	PCC BSE CSE 10 1/4	SQ YD	158.000				
40600100	BIT MATLS PR CT	GALLON	690.000				
40600200	BIT MATLS PR CT	TON	4.600				
40600300	AGG PR CT	TON	31.000				
40600625	LEV BIND MM N50	TON	75.000				
40600635	LEV BIND MM N70	TON	237.000				
40601005	HMA REPL OVER PATCH	TON	5.000				
40603080	HMA BC IL-19.0 N50	TON	2,587.000				
40603335	HMA SC "D" N50	TON	654.000				
40603340	HMA SC "D" N70	TON	322.000				
40603595	P HMA SC "F" N90	TON	413.000				
42000501	PCC PVT 10 JOINTED	SQ YD	7,681.000				
42000506	PCC PVT 10 1/4 JOINTD	SQ YD	26,807.000				
42001300	PROTECTIVE COAT	SQ YD	40,294.000				

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42001400	BR APPROACH PAVT SPL	SQ YD	1,004.000				
42300200	PCC DRIVEWAY PAVT 6	SQ YD	32.000				
44000100	PAVEMENT REM	SQ YD	36,302.000				
44000157	HMA SURF REM 2	SQ YD	2,662.000				
44000160	HMA SURF REM 2 3/4	SQ YD	4,038.000				
44000198	HMA SURF REM VAR DP	SQ YD	710.000				
44000200	DRIVE PAVEMENT REM	SQ YD	81.000				
44000500	COMB CURB GUTTER REM	FOOT	13,486.000				
44000700	APPROACH SLAB REM	SQ YD	303.000				
44002212	HMA RM OV PATCH 3	SQ YD	30.000				
44002805	ISLAND REMOVAL	SQ FT	480.000				
44003100	MEDIAN REMOVAL	SQ FT	10,298.000				
44004250	PAVED SHLD REMOVAL	SQ YD	3,880.000				
44200988	CL B PATCH T4 11	SQ YD	260.000				
44300200	STRIP REF CR CON TR	FOOT	251.000				

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48101498	AGGREGATE SHLDS B 4	SQ YD	859.000				
48203021	HMA SHOULDERS 6	SQ YD	3,119.000				
50100100	REM EXIST STRUCT	EACH	1.000				
50105210	REM EXIST CULVERTS	FOOT	38.000				
50105220	PIPE CULVERT REMOV	FOOT	116.000				
50157300	PROTECTIVE SHIELD	SQ YD	4,384.000				
50200100	STRUCTURE EXCAVATION	CU YD	3,238.000				
50200410	ROCK EXC STRUCT SPL	CU YD	150.000				
50300225	CONC STRUCT	CU YD	608.000				
50300255	CONC SUP-STR	CU YD	1,154.000				
50300260	BR DECK GROOVING	SQ YD	3,186.000				
50300280	CONCRETE ENCASEMENT	CU YD	32.000				
50300300	PROTECTIVE COAT	SQ YD	5,362.000				
50500105	F & E STRUCT STEEL	L SUM	1.000				
50500505	STUD SHEAR CONNECTORS	EACH	13,860.000				

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50800205	REINF BARS, EPOXY CTD	POUND	310,100.000				
50800515	BAR SPLICERS	EACH	1,786.000				
50901730	BRIDGE FENCE RAILING	FOOT	529.000				
50901750	PARAPET RAILING	FOOT	295.000				
51100100	SLOPE WALL 4	SQ YD	1,554.000				
51201800	FUR STL PILE HP14X73	FOOT	7,022.000				
51202305	DRIVING PILES	FOOT	7,022.000				
51203800	TEST PILE ST HP14X73	EACH	3.000				
51204650	PILE SHOES	EACH	130.000				
51205200	TEMP SHT PILING	SQ FT	3,670.000				
51500100	NAME PLATES	EACH	1.000				
52100540	ANCHOR BOLTS 1 1/2	EACH	44.000				
542A1063	P CUL CL A 2 18	FOOT	268.000				
542A1069	P CUL CL A 2 24	FOOT	71.000				
542A1075	P CUL CL A 2 30	FOOT	185.000				

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542A2749	P CUL CL A 4 24	FOOT	184.000				
542A2761	P CUL CL A 4 36	FOOT	269.000				
54213447	END SECTIONS 12	EACH	3.000				
54213450	END SECTIONS 15	EACH	4.000				
54213459	END SECTIONS 24	EACH	4.000				
54213465	END SECTIONS 30	EACH	2.000				
54213657	PRC FLAR END SEC 12	EACH	12.000				
54213663	PRC FLAR END SEC 18	EACH	2.000				
54213681	PRC FLAR END SEC 36	EACH	2.000				
54215412	CIP RC END SEC 12	EACH	3.000				
54215448	CIP RC END SEC 48	EACH	1.000				
550A0050	STORM SEW CL A 1 12	FOOT	636.000				
550A0070	STORM SEW CL A 1 15	FOOT	55.000				
550A0120	STORM SEW CL A 1 24	FOOT	7.000				
550A0340	STORM SEW CL A 2 12	FOOT	2,832.000				

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550A0360	STORM SEW CL A 2 15	FOOT	518.000				
550A0380	STORM SEW CL A 2 18	FOOT	209.000				
550A0410	STORM SEW CL A 2 24	FOOT	327.000				
550A0430	STORM SEW CL A 2 30	FOOT	184.000				
550A0450	STORM SEW CL A 2 36	FOOT	425.000				
550A0480	STORM SEW CL A 2 48	FOOT	140.000				
550A0710	STORM SEW CL A 3 24	FOOT	245.000				
550A1050	STORM SEW CL A 4 36	FOOT	314.000				
550A1080	STORM SEW CL A 4 48	FOOT	116.000				
550A2520	SS RG CL A 2 12	FOOT	148.000				
550A2530	SS RG CL A 2 15	FOOT	62.000				
55034300	SS 1 RCEP S30 R19	FOOT	164.000				
55100500	STORM SEWER REM 12	FOOT	789.000				
55100900	STORM SEWER REM 18	FOOT	15.000				
55101100	STORM SEWER REM 21	FOOT	10.000				

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55101600	STORM SEWER REM 36	FOOT	420.000				
56400100	FIRE HYDNNTS TO BE MVD	EACH	1.000				
56400500	FIRE HYDNNTS TO BE REM	EACH	2.000				
58700300	CONCRETE SEALER	SQ FT	4,730.000				
59100100	GEOCOMPOSITE WALL DR	SQ YD	286.000				
59300100	CONTR LOW-STRENG MATL	CU YD	181.000				
60100060	CONC HDWL FOR P DRAIN	EACH	7.000				
60107700	PIPE UNDERDRAINS 6	FOOT	1,789.000				
60108200	PIPE UNDERDRAIN 6 SP	FOOT	194.000				
60109582	P UNDR FOR STRUCT 6	FOOT	1,189.000				
60201310	CB TA 4 DIA T20F&G	EACH	72.000				
60205010	CB TA 5 DIA T20F&G	EACH	1.000				
60206905	CB TC T1F OL	EACH	9.000				
60207605	CB TC T8G	EACH	1.000				
60207905	CB TC T11F&G	EACH	5.000				

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60208210	CB TC T20F&G	EACH	3.000				
60213800	RD CB 4 DIA T1F OL	EACH	1.000				
60214400	RD CB 4 DIA T8G	EACH	1.000				
60214700	RD CB 4 DIA T11F&G	EACH	2.000				
60214900	RD CB 4 DIA TB24 F&G	EACH	2.000				
60218300	MAN TA 4 DIA T1F OL	EACH	1.000				
60218400	MAN TA 4 DIA T1F CL	EACH	4.000				
60219300	MAN TA 4 DIA T11F&G	EACH	1.000				
60221000	MAN TA 5 DIA T1F OL	EACH	3.000				
60221100	MAN TA 5 DIA T1F CL	EACH	8.000				
60223700	MAN TA 6 DIA T1F OL	EACH	1.000				
60223800	MAN TA 6 DIA T1F CL	EACH	4.000				
60224600	RD MAN 4 DIA T1F CL	EACH	2.000				
60249300	VALVE BOXES 4	EACH	1.000				
60249400	VALVE BOXES 6	EACH	1.000				

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60250200	CB ADJUST	EACH	1.000				
60251500	CB ADJ NEW T11F&G	EACH	1.000				
60255500	MAN ADJUST	EACH	2.000				
60260300	INLETS ADJ NEW T1F OL	EACH	2.000				
60500040	REMOV MANHOLES	EACH	2.000				
60500050	REMOV CATCH BAS	EACH	11.000				
60500060	REMOV INLETS	EACH	39.000				
60600605	CONC CURB TB	FOOT	39.500				
60603800	COMB CC&G TB6.12	FOOT	3,718.500				
60605000	COMB CC&G TB6.24	FOOT	8,566.500				
60608600	COMB CC&G TM6.06	FOOT	133.500				
60610400	COMB CC&G TM6.24	FOOT	255.500				
60618300	CONC MEDIAN SURF 4	SQ FT	2,187.000				
60619200	CONC MED TSB6.06	SQ FT	1,096.000				
60619600	CONC MED TSB6.12	SQ FT	2,907.000				

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60623711	CONC MEDIAN	SQ FT	308.000				
63000000	SPBGR TY A	FOOT	1,587.500				
63100045	TRAF BAR TERM T2	EACH	3.000				
63100085	TRAF BAR TERM T6	EACH	3.000				
63100167	TR BAR TRM T1 SPL TAN	EACH	5.000				
63200310	GUARDRAIL REMOV	FOOT	2,956.000				
63500105	DELINEATORS	EACH	38.000				
63500120	DELINEATOR REMOVAL	EACH	40.000				
66400105	CH LK FENCE 4	FOOT	494.000				
66400305	CH LK FENCE 6	FOOT	112.000				
66410300	CH LK FENCE REMOV	FOOT	111.000				
67100100	MOBILIZATION	L SUM	1.000				
70101800	TRAF CONT & PROT SPL	L SUM	1.000				
70106800	CHANGEABLE MESSAGE SN	CAL MO	60.000				
70300510	PAVT MARK TAPE T3 L&S	SQ FT	2,421.000				

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70300520	PAVT MARK TAPE T3 4	FOOT	44,315.000				
70300550	PAVT MARK TAPE T3 8	FOOT	4,209.000				
70300560	PAVT MARK TAPE T3 12	FOOT	889.000				
70300570	PAVT MARK TAPE T3 24	FOOT	1,069.000				
70301000	WORK ZONE PAVT MK REM	SQ FT	42,167.000				
70400100	TEMP CONC BARRIER	FOOT	5,890.000				
70400200	REL TEMP CONC BARRIER	FOOT	6,690.000				
72000100	SIGN PANEL T1	SQ FT	628.000				
72000200	SIGN PANEL T2	SQ FT	204.000				
72000300	SIGN PANEL T3	SQ FT	539.000				
72400310	REMOV SIGN PANEL T1	SQ FT	430.000				
72400320	REMOV SIGN PANEL T2	SQ FT	170.000				
72400330	REMOV SIGN PANEL T3	SQ FT	355.000				
72400500	RELOC SIN PAN ASSY TA	EACH	1.000				
72400730	RELOC SIGN PANEL T3	SQ FT	459.000				

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72700100	STR STL SIN SUP BA	POUND	2,313.000				
72800100	TELES STL SIN SUPPORT	FOOT	494.000				
73000100	WOOD SIN SUPPORT	FOOT	481.000				
73100100	BASE TEL STL SIN SUPP	EACH	4.000				
73400100	CONC FOUNDATION	CU YD	6.000				
78000100	THPL PVT MK LTR & SYM	SQ FT	1,587.000				
78000200	THPL PVT MK LINE 4	FOOT	23,505.000				
78000400	THPL PVT MK LINE 6	FOOT	2,777.000				
78000500	THPL PVT MK LINE 8	FOOT	1,434.000				
78000600	THPL PVT MK LINE 12	FOOT	930.000				
78000650	THPL PVT MK LINE 24	FOOT	647.000				
78008200	POLYUREA PM T1 LTR-SY	SQ FT	3,016.000				
78008210	POLYUREA PM T1 LN 4	FOOT	47,192.000				
78008230	POLYUREA PM T1 LN 6	FOOT	8,922.000				
78008240	POLYUREA PM T1 LN 8	FOOT	1,608.000				

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78008250	POLYUREA PM T1 LN 12	FOOT	708.000				
78008270	POLYUREA PM T1 LN 24	FOOT	996.000				
78100100	RAISED REFL PAVT MKR	EACH	472.000				
78200100	MONODIR PRIS BAR REFL	EACH	244.000				
78200410	GUARDRAIL MKR TYPE A	EACH	31.000				
78201000	TERMINAL MARKER - DA	EACH	5.000				
78300100	PAVT MARKING REMOVAL	SQ FT	9,109.000				
78300200	RAISED REF PVT MK REM	EACH	288.000				
80400100	ELECT SERV INSTALL	EACH	3.000				
81000600	CON T 2 GALVS	FOOT	3,682.000				
81000700	CON T 2 1/2 GALVS	FOOT	1,889.000				
81000800	CON T 3 GALVS	FOOT	84.000				
81001000	CON T 4 GALVS	FOOT	40.000				
81018500	CON P 2 GALVS	FOOT	1,855.000				
81018900	CON P 4 GALVS	FOOT	2,074.000				

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81200120	CON EMB STR 2 GALVS	FOOT	825.000				
81200270	CON EMB STR 4 PVC	FOOT	201.000				
81302000	JUN BX CI AS 4X4X3	EACH	12.000				
81302300	JUN BX CI AS 12X8X6	EACH	2.000				
81304100	JUN BOX EM S 12X12X6	EACH	4.000				
81400100	HANDHOLE	EACH	27.000				
81400200	HD HANDHOLE	EACH	6.000				
81400300	DBL HANDHOLE	EACH	8.000				
81603170	UD 3#6 #8G EPRRHW 1	FOOT	9,180.000				
81603195	UD 3#2#2GEPRRHW 1 1/4	FOOT	60.000				
81700110	EC C EPR RHW 1C 10	FOOT	3,000.000				
81700115	EC C EPR RHW 1C 8	FOOT	125.000				
81700225	EC C EPR RHW 2-1C 6	FOOT	250.000				
81800300	A CBL 3-1C2 MESS WIRE	FOOT	75.000				
81800415	A CBL 4-1C6 MESS WIRE	FOOT	9,185.000				

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81900200	TR & BKFIL F ELECT WK	FOOT	14,055.000				
82102400	LUM SV HOR MT 400W	EACH	58.000				
83050730	LT P A 47.5MH 8DA	EACH	14.000				
83050805	LT P A 47.5MH 12DA	EACH	26.000				
83057435	LT P WD 80 CL3 15MA	EACH	4.000				
83600300	LIGHT POLE FDN 30D	FOOT	311.000				
83800205	BKWY DEV TR B 15BC	EACH	36.000				
84200500	REM EX LT UNIT SALV	EACH	14.000				
84200800	POLE FOUNDATION RM	EACH	15.000				
84400105	RELOC EX LT UNIT	EACH	1.000				
84500110	REMOV LIGHTING CONTR	EACH	1.000				
84500120	REMOV ELECT SERV INST	EACH	1.000				
84500130	REMOV LTG CONTR FDN	EACH	1.000				
85700200	FAC T4 CAB	EACH	1.000				
85700205	FAC T4 CAB SPL	EACH	2.000				

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86400100	TRANSCEIVER - FIB OPT	EACH	3.000				
87100160	FO CAB C 62.5/125 24F	FOOT	11,415.000				
87301205	ELCBL C SIGNAL 14 1C	FOOT	4,819.000				
87301215	ELCBL C SIGNAL 14 2C	FOOT	2,663.000				
87301225	ELCBL C SIGNAL 14 3C	FOOT	2,881.000				
87301245	ELCBL C SIGNAL 14 5C	FOOT	19,064.000				
87301255	ELCBL C SIGNAL 14 7C	FOOT	2,843.000				
87301305	ELCBL C LEAD 14 1PR	FOOT	23,565.000				
87301805	ELCBL C SERV 6 2C	FOOT	169.000				
87502480	TS POST GALVS 14	EACH	10.000				
87502500	TS POST GALVS 16	EACH	1.000				
87502520	TS POST GALVS 18	EACH	2.000				
87700150	S MAA & P 22	EACH	1.000				
87700180	S MAA & P 28	EACH	1.000				
87700200	S MAA & P 32	EACH	1.000				

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87700250	S MAA & P 42	EACH	1.000				
87700260	S MAA & P 44	EACH	1.000				
87700280	S MAA & P 48	EACH	3.000				
87700290	S MAA & P 50	EACH	3.000				
87700300	S MAA & P 52	EACH	3.000				
87700320	S MAA & P 55	EACH	1.000				
87702860	STL COMB MAA&P 26	EACH	1.000				
87703000	STL COMB MAA&P 55	EACH	1.000				
87800100	CONC FDN TY A	FOOT	60.000				
87800150	CONC FDN TY C	FOOT	8.000				
87800200	CONC FDN TY D	FOOT	4.000				
87800400	CONC FDN TY E 30D	FOOT	175.000				
87800415	CONC FDN TY E 36D	FOOT	105.000				
87900200	DRILL EX HANDHOLE	EACH	8.000				
88030020	SH LED 1F 3S MAM	EACH	47.000				

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88030050	SH LED 1F 3S BM	EACH	22.000				
88030070	SH LED 1F 4S BM	EACH	2.000				
88030100	SH LED 1F 5S BM	EACH	5.000				
88030110	SH LED 1F 5S MAM	EACH	3.000				
88200110	TS BACKPLATE LOUVERED	EACH	50.000				
88500100	INDUCTIVE LOOP DETECT	EACH	62.000				
88600100	DET LOOP T1	FOOT	2,261.000				
88600300	DET LOOP T3	FOOT	2,930.000				
88700200	LIGHT DETECTOR	EACH	12.000				
88700300	LIGHT DETECTOR AMP	EACH	10.000				
89000100	TEMP TR SIG INSTALL	EACH	4.000				
89500100	RELOC EX SIG HEAD	EACH	3.000				
89502300	REM ELCBL FR CON	FOOT	7,836.000				
89502375	REMOV EX TS EQUIP	EACH	4.000				
89502380	REMOV EX HANDHOLE	EACH	40.000				

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 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 60B01

State Job # - C-91-230-06  
 PPS NBR - 1-74000-0100  
 County Name - LAKE- -  
 Code - 97 - -  
 District - 1 - -  
 Section Number - 119R-2

Project Number  
 ACHPP-HPP-NHF-0335/009/

Route  
 FAP 335

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
89502385	REMOV EX CONC FDN	EACH	33.000				

**CONTRACT NUMBER**

**60B01**

**THIS IS THE TOTAL BID**

**\$ \_\_\_\_\_**

**NOTES:**

1. Each **PAY ITEM** should have a **UNIT PRICE** and a **TOTAL PRICE**.
2. The **UNIT PRICE** shall govern if no **TOTAL PRICE** is shown or if there is a discrepancy between the product of the **UNIT PRICE** multiplied by the **QUANTITY**.
3. If a **UNIT PRICE** is omitted, the **TOTAL PRICE** will be divided by the **QUANTITY** in order to establish a **UNIT PRICE**.
4. A bid may be declared **UNACCEPTABLE** if neither a unit price nor a total price is shown.

## RETURN WITH BID

### STATE REQUIRED ETHICAL STANDARDS GOVERNING CONTRACT PROCUREMENT: ASSURANCES, CERTIFICATIONS AND DISCLOSURES

#### I. GENERAL

A. Article 50 of the Illinois Procurement Code establishes the duty of all State chief procurement officers, State purchasing officers, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

B. In order to comply with the provisions of Article 50 and to carry out the duty established therein, all bidders are to adhere to ethical standards established for the procurement process, and to make such assurances, disclosures and certifications required by law. By execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances has been read and understood, that each certification is made and understood, and that each disclosure requirement has been understood and completed.

C. In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for termination of the contract and the suspension or debarment of the bidder.

#### II. ASSURANCES

A. The assurances hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous assurance, and the surety providing the performance bond shall be responsible for the completion of the contract.

##### B. Felons

1. The Illinois Procurement Code provides:

Section 50-10. Felons. Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any state agency from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-10.

##### C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

(a) Prohibition. It is unlawful for any person holding an elective office in this State, holding a seat in the General Assembly, or appointed to or employed in any of the offices or agencies of state government and who receives compensation for such employment in excess of 60% of the salary of the Governor of the State of Illinois, or who is an officer or employee of the Capital Development Board or the Illinois Toll Highway Authority, or who is the spouse or minor child of any such person to have or acquire any contract, or any direct pecuniary interest in any contract therein, whether for stationery, printing, paper, or any services, materials, or supplies, that will be wholly or partially satisfied by the payment of funds appropriated by the General Assembly of the State of Illinois or in any contract of the Capital Development Board or the Illinois Toll Highway authority.

(b) Interests. It is unlawful for any firm, partnership, association or corporation, in which any person listed in subsection (a) is entitled to receive (i) more than 7 1/2% of the total distributable income or (ii) an amount in excess of the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(c) Combined interests. It is unlawful for any firm, partnership, association, or corporation, in which any person listed in subsection (a) together with his or her spouse or minor children is entitled to receive (i) more than 15%, in the aggregate, of the total distributable income or (ii) an amount in excess of 2 times the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(d) Securities. Nothing in this Section invalidates the provisions of any bond or other security previously offered or to be offered for sale or sold by or for the State of Illinois.

(e) Prior interests. This Section does not affect the validity of any contract made between the State and an officer or employee of the State or member of the General Assembly, his or her spouse, minor child or any combination of those persons if that contract was in existence before his or her election or employment as an officer, member, or employee. The contract is voidable, however, if it cannot be completed within 365 days after the officer, member, or employee takes office or is employed.

The current salary of the Governor is \$150,700.00. Sixty percent of the salary is \$90,420.00.

## RETURN WITH BID

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-13, or that an effective exemption has been issued by the Board of Ethics to any individual subject to the Section 50-13 prohibitions pursuant to the provisions of Section 50-20 of the Code and Executive Order Number 3 (1998). Information concerning the exemption process is available from the Department upon request.

### **D. Negotiations**

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

(a) It is unlawful for any person employed in or on a continual contractual relationship with any of the offices or agencies of State government to participate in contract negotiations on behalf of that office or agency with any firm, partnership, association, or corporation with whom that person has a contract for future employment or is negotiating concerning possible future employment.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-15, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

### **E. Inducements**

1. The Illinois Procurement Code provides:

Section 50-25. Inducement. Any person who offers or pays any money or other valuable thing to any person to induce him or her not to bid for a State contract or as recompense for not having bid on a State contract is guilty of a Class 4 felony. Any person who accepts any money or other valuable thing for not bidding for a State contract or who withholds a bid in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-25, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

### **F. Revolving Door Prohibition**

1. The Illinois Procurement Code provides:

Section 50-30. Revolving door prohibition. Chief procurement officers, associate procurement officers, State purchasing officers, their designees whose principal duties are directly related to State procurement, and executive officers confirmed by the Senate are expressly prohibited for a period of 2 years after terminating an affected position from engaging in any procurement activity relating to the State agency most recently employing them in an affected position for a period of at least 6 months. The prohibition includes, but is not limited to: lobbying the procurement process; specifying; bidding; proposing bid, proposal, or contract documents; on their own behalf or on behalf of any firm, partnership, association, or corporation. This Section applies only to persons who terminate an affected position on or after January 15, 1999.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-30, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

### **G. Reporting Anticompetitive Practices**

1. The Illinois Procurement Code provides:

Section 50-40. Reporting anticompetitive practices. When, for any reason, any vendor, bidder, contractor, chief procurement officer, State purchasing officer, designee, elected official, or State employee suspects collusion or other anticompetitive practice among any bidders, offerors, contractors, proposers, or employees of the State, a notice of the relevant facts shall be transmitted to the Attorney General and the chief procurement officer.

2. The bidder assures the Department that it has not failed to report any relevant facts concerning the practices addressed in Section 50-40 which may involve the contract for which the bid is submitted.

### **H. Confidentiality**

1. The Illinois Procurement Code provides:

Section 50-45. Confidentiality. Any chief procurement officer, State purchasing officer, designee, or executive officer who willfully uses or allows the use of specifications, competitive bid documents, proprietary competitive information, proposals, contracts, or selection information to compromise the fairness or integrity of the procurement, bidding, or contract process shall be subject to immediate dismissal, regardless of the Personnel code, any contract, or any collective bargaining agreement, and may in addition be subject to criminal prosecution.

2. The bidder assures the Department that it has no knowledge of any fact relevant to the practices addressed in Section 50-45 which may involve the contract for which the bid is submitted.

## RETURN WITH BID

### **I. Insider Information**

1. The Illinois Procurement Act provides:

Section 50-50. Insider information. It is unlawful for any current or former elected or appointed State official or State employee to knowingly use confidential information available only by virtue of that office or employment for actual or anticipated gain for themselves or another person.

2. The bidder assures the Department that it has no knowledge of any facts relevant to the practices addressed in Section 50-50 which may involve the contract for which the bid is submitted.

### **III. CERTIFICATIONS**

**A.** The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous certification, and the surety providing the performance bond shall be responsible for completion of the contract.

#### **B. Bribery**

1. The Illinois Procurement Code provides:

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 1961.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State shall contain a certification by the contractor that the contractor is not barred from being awarded a contract or subcontract under this Section. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

2. The bidder certifies that it is not barred from being awarded a contract under Section 50.5.

#### **C. Educational Loan**

1. Section 3 of the Educational Loan Default Act provides:

§ 3. No State agency shall contract with an individual for goods or services if that individual is in default, as defined in Section 2 of this Act, on an educational loan. Any contract used by any State agency shall include a statement certifying that the individual is not in default on an educational loan as provided in this Section.

2. The bidder, if an individual as opposed to a corporation, partnership or other form of business organization, certifies that the bidder is not in default on an educational loan as provided in Section 3 of the Act.

#### **D. Bid-Rigging/Bid Rotating**

1. Section 33E-11 of the Criminal Code of 1961 provides:

§ 33E-11. (a) Every bid submitted to and public contract executed pursuant to such bid by the State or a unit of local government shall contain a certification by the prime contractor that the prime contractor is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of this Article. The State and units of local government shall provide the appropriate forms for such certification.

## RETURN WITH BID

(b) A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

A violation of Section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

A violation of Section 33E-4 would be represented by a conviction of the crime of bid-rotating which, in addition to Class 2 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be permanently barred from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

2. The bidder certifies that it is not barred from contracting with the Department by reason of a violation of either Section 33E-3 or Section 33E-4.

### **E. International Anti-Boycott**

1. Section 5 of the International Anti-Boycott Certification Act provides:

§ 5. State contracts. Every contract entered into by the State of Illinois for the manufacture, furnishing, or purchasing of supplies, material, or equipment or for the furnishing of work, labor, or services, in an amount exceeding the threshold for small purchases according to the purchasing laws of this State or \$10,000.00, whichever is less, shall contain certification, as a material condition of the contract, by which the contractor agrees that neither the contractor nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

2. The bidder makes the certification set forth in Section 5 of the Act.

### **F. Drug Free Workplace**

1. The Illinois "Drug Free Workplace Act" applies to this contract and it is necessary to comply with the provisions of the "Act" if the contractor is a corporation, partnership, or other entity (including a sole proprietorship) which has 25 or more employees.

2. The bidder certifies that if awarded a contract in excess of \$5,000 it will provide a drug free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the contractor's workplace; specifying the actions that will be taken against employees for violations of such prohibition; and notifying the employee that, as a condition of employment on such contract, the employee shall abide by the terms of the statement, and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(b) Establishing a drug free awareness program to inform employees about the dangers of drug abuse in the workplace; the contractor's policy of maintaining a drug free workplace; any available drug counseling, rehabilitation, and employee assistance programs; and the penalties that may be imposed upon employees for drug violations.

(c) Providing a copy of the statement required by subparagraph (1) to each employee engaged in the performance of the contract and to post the statement in a prominent place in the workplace.

(d) Notifying the Department within ten (10) days after receiving notice from an employee or otherwise receiving actual notice of the conviction of an employee for a violation of any criminal drug statute occurring in the workplace.

(e) Imposing or requiring, within 30 days after receiving notice from an employee of a conviction or actual notice of such a conviction, an appropriate personnel action, up to and including termination, or the satisfactory participation in a drug abuse assistance or rehabilitation program approved by a federal, state or local health, law enforcement or other appropriate agency.

(f) Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of the actions and efforts stated in this certification.

**G. Debt Delinquency**

1. The Illinois Procurement Code provides:

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder certifies that it, or any affiliate, is not barred from being awarded a contract under 30 ILCS 500. Section 50-11 prohibits a person from entering into a contract with a State agency if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The contractor further acknowledges that the contracting State agency may declare the contract void if this certification is false or if the contractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

**H. Sarbanes-Oxley Act of 2002**

1. The Illinois Procurement Code provides:

Section 50-60(c).

The contractor certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 for a period of five years prior to the date of the bid or contract. The contractor acknowledges that the contracting agency shall declare the contract void if this certification is false.

**I. Addenda**

The contractor or bidder certifies that all relevant addenda have been incorporated in to this contract. Failure to do so may cause the bid to be declared unacceptable.

**J. Section 42 of the Environmental Protection Act**

The contractor certifies in accordance with 30 ILCS 500/50-12 that the bidder or contractor is not barred from being awarded a contract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The contractor acknowledges that the contracting agency may declare the contract void if this certification is false.

**K. Apprenticeship and Training Certification (Does not apply to federal aid projects)**

In accordance with the provisions of Section 30-22 (6) of the Illinois Procurement Code, the bidder certifies that it is a participant, either as an individual or as part of a group program, in the approved apprenticeship and training programs applicable to each type of work or craft that the bidder will perform with its own forces. The bidder further certifies for work that will be performed by subcontract that each of its subcontractors submitted for approval either (a) is, at the time of such bid, participating in an approved, applicable apprenticeship and training program; or (b) will, prior to commencement of performance of work pursuant to this contract, begin participation in an approved apprenticeship and training program applicable to the work of the subcontract. The Department, at any time before or after award, may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. Applicable apprenticeship and training programs are those that have been approved and registered with the United States Department of Labor. The bidder shall list in the space below, the official name of the program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's forces. Types of work or craft work that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category that does not have an applicable apprenticeship or training program. **The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project as reported on the Construction Employee Workforce Projection (Form BC-1256) and returned with the bid is accounted for and listed.**

**NA - FEDERAL**

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The requirements of this certification and disclosure are a material part of the contract, and the contractor shall require this certification provision to be included in all approved subcontracts. In order to fulfill this requirement, it shall not be necessary that an applicable program sponsor be currently taking or that it will take applications for apprenticeship, training or employment during the performance of the work of this contract.

**L. Executive Order Number 1 (2007) Regarding Lobbying on Government Procurements**

The bidder hereby warrants and certifies that they have complied and will comply with the requirements set forth in this Order. The requirements of this warrant and certification are a material part of the contract, and the contractor shall require this warrant and certification provision to be included in all approved subcontracts.

## TO BE RETURNED WITH BID

### IV. DISCLOSURES

**A.** The disclosures hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous disclosure, and the surety providing the performance bond shall be responsible for completion of the contract.

### **B. Financial Interests and Conflicts of Interest**

1. Section 50-35 of the Illinois Procurement Code provides that all bids of more than \$10,000 shall be accompanied by disclosure of the financial interests of the bidder. This disclosed information for the successful bidder, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the bidding entity or its parent entity, whichever is less, unless the contractor or bidder is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

In addition, all disclosures shall indicate any other current or pending contracts, proposals, leases, or other ongoing procurement relationships the bidding entity has with any other unit of state government and shall clearly identify the unit and the contract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. Subject individuals should be covered each by one form. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies. **The forms must be included with each bid or incorporated by reference.**

### **C. Disclosure Form Instructions**

#### **Form A: For bidders that have previously submitted the information requested in Form A**

The Department has retained the Form A disclosures submitted by all bidders responding to these requirements for the April 24, 1998 or any subsequent letting conducted by the Department. The bidder has the option of submitting the information again or the bidder may sign the following certification statement indicating that the information previously submitted by the bidder is, as of the date of signature, current and accurate. The Certification must be signed and dated by a person who is authorized to execute contracts for the bidding company. Before signing this certification, the bidder should carefully review its prior submissions to ensure the Certification is correct. If the Bidder signs the Certification, the Bidder should proceed to Form B instructions.

### CERTIFICATION STATEMENT

**I have determined that the Form A disclosure information previously submitted is current and accurate, and all forms are hereby incorporated by reference in this bid. Any necessary additional forms or amendments to previously submitted forms are attached to this bid.**

\_\_\_\_\_  
(Bidding Company)

\_\_\_\_\_  
Name of Authorized Representative (type or print)

\_\_\_\_\_  
Title of Authorized Representative (type or print)

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Date

**Form A: For bidders who have NOT previously submitted the information requested in Form A**

If the bidder is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. If a bidder is not subject to Federal 10K reporting, the bidder must determine if any individuals are required by law to complete a financial disclosure form. To do this, the bidder should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on the second page of Form A must be signed and dated by a person that is authorized to execute contracts for the bidding company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES \_\_\_ NO \_\_\_
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than \$90,420.00? YES \_\_\_ NO \_\_\_
3. Does anyone in your organization receive more than \$90,420.00 of the bidding entity's or parent entity's distributive income? (Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.) YES \_\_\_ NO \_\_\_
4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than \$90,420.00? YES \_\_\_ NO \_\_\_  
(Note: Only one set of forms needs to be completed per person per bid even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The bidder must determine each individual in the bidding entity or the bidding entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable.** The person signing can be, but does not have to be, the person for which the form is being completed. The bidder is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the NOT APPLICABLE STATEMENT on page 2 of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

**Form B: Identifying Other Contracts & Procurement Related Information** Disclosure Form B must be completed for each bid submitted by the bidding entity. It must be signed by an individual who is authorized to execute contracts for the bidding entity. *Note: Signing the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, signed and dated or the bidder may be considered nonresponsive and the bid will not be accepted.*

The Bidder shall identify, by checking Yes or No on Form B, whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the bidder only needs to complete the signature box on the bottom of Form B. If "Yes" is checked, the bidder must do one of the following:

Option I: If the bidder did not submit an Affidavit of Availability to obtain authorization to bid, the bidder must list all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Do not include IDOT contracts. Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included. Bidders who submit Affidavits of Availability are suggested to use Option II.

Option II: If the bidder is required and has submitted an Affidavit of Availability in order to obtain authorization to bid, the bidder may write or type "See Affidavit of Availability" which indicates that the Affidavit of Availability is incorporated by reference and includes all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. For any contracts that are not covered by the Affidavit of Availability, the bidder must identify them on Form B or on an attached sheet(s). These might be such things as leases.

**D. Bidders Submitting More Than One Bid**

Bidders submitting multiple bids may submit one set of forms consisting of all required Form A disclosures and one Form B for use with all bids. Please indicate in the space provided below the bid item that contains the original disclosure forms and the bid items which incorporate the forms by reference.

- The bid submitted for letting item \_\_\_\_\_ contains the Form A disclosures or Certification Statement and the Form B disclosures. The following letting items incorporate the said forms by reference:

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RETURN WITH BID/OFFER

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A Financial Information & Potential Conflicts of Interest Disclosure

Contractor Name, Legal Address, City, State, Zip, Telephone Number, Email Address, Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Code (30 ILCS 500). Vendors desiring to enter into a contract with the State of Illinois must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for bids in excess of \$10,000, and for all open-ended contracts. A publicly traded company may submit a 10K disclosure (or equivalent if applicable) in satisfaction of the requirements set forth in Form A. See Disclosure Form Instructions.

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the BIDDER (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than \$90,420.00 (60% of the Governor's salary as of 7/1/01). (Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)

FOR INDIVIDUAL (type or print information)

NAME: \_\_\_\_\_

ADDRESS \_\_\_\_\_

Type of ownership/distributable income share:

stock \_\_\_\_\_ sole proprietorship \_\_\_\_\_ Partnership \_\_\_\_\_ other: (explain on separate sheet): % or \$ value of ownership/distributable income share: \_\_\_\_\_

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services. Yes \_\_\_ No \_\_\_

If your answer is yes, please answer each of the following questions.

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois Toll Highway Authority? Yes \_\_\_ No \_\_\_

2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name the State agency for which you are employed and your annual salary. \_\_\_\_\_

**RETURN WITH BID/OFFER**

- 3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes \_\_\_ No \_\_\_
  
- 4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or minor children entitled to receive (i) more than 15% in aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor? Yes \_\_\_ No \_\_\_

---

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment for services in the previous 2 years.

Yes \_\_\_ No \_\_\_

If your answer is yes, please answer each of the following questions.

- 1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois Toll Highway Authority? Yes \_\_\_ No \_\_\_
  
- 2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name of the spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. \_\_\_\_\_

---

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds \$90,420.00, (60% of the salary of the Governor as of 7/1/01) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes \_\_\_ No \_\_\_

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or any minor children entitled to receive (i) more than 15% in the aggregate of the total distributable income from your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor?

Yes \_\_\_ No \_\_\_

---

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years.

Yes \_\_\_ No \_\_\_

---

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter.

Yes \_\_\_ No \_\_\_

---

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United State of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years.

Yes \_\_\_ No \_\_\_

---

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter.

Yes \_\_\_ No \_\_\_

---

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government.

Yes \_\_\_ No \_\_\_

**RETURN WITH BID/OFFER**

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes \_\_\_ No \_\_\_

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes \_\_\_ No \_\_\_

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes \_\_\_ No \_\_\_

**APPLICABLE STATEMENT**

**This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page.**

Completed by: \_\_\_\_\_  
Name of Authorized Representative (type or print)

Completed by: \_\_\_\_\_  
Title of Authorized Representative (type or print)

Completed by: \_\_\_\_\_ Date \_\_\_\_\_  
Signature of Individual or Authorized Representative

**NOT APPLICABLE STATEMENT**

**I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.**

**This Disclosure Form A is submitted on behalf of the CONTRACTOR listed on the previous page.**

\_\_\_\_\_  
Name of Authorized Representative (type or print)

\_\_\_\_\_  
Title of Authorized Representative (type or print)

\_\_\_\_\_  
Signature of Authorized Representative Date \_\_\_\_\_

RETURN WITH BID/OFFER

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**Form B  
Other Contracts &  
Procurement Related Information  
Disclosure**

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Act (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for bids in excess of \$10,000, and for all open-ended contracts.

**DISCLOSURE OF OTHER CONTRACTS AND PROCUREMENT RELATED INFORMATION**

**1. Identifying Other Contracts & Procurement Related Information.** The BIDDER shall identify whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes \_\_\_ No \_\_\_

If "No" is checked, the bidder only needs to complete the signature box on the bottom of this page.

**2. If "Yes" is checked.** Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

**THE FOLLOWING STATEMENT MUST BE SIGNED**

_____	
Name of Authorized Representative (type or print)	
_____	
Title of Authorized Representative (type or print)	
_____	_____
Signature of Authorized Representative	Date

## **RETURN WITH BID**

### **SPECIAL NOTICE TO CONTRACTORS**

The following requirements of the Illinois Department of Human Rights' Rules and Regulations are applicable to bidders on all construction contracts advertised by the Illinois Department of Transportation:

#### **CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION**

- (a) All bidders on construction contracts shall complete and submit, along with and as part of their bids, a Bidder's Employee Utilization Form (Form BC-1256) setting forth a projection and breakdown of the total workforce intended to be hired and/or allocated to such contract work by the bidder including a projection of minority and female employee utilization in all job classifications on the contract project.
- (b) The Department of Transportation shall review the Employee Utilization Form, and workforce projections contained therein, of the contract awardee to determine if such projections reflect an underutilization of minority persons and/or women in any job classification in accordance with the Equal Employment Opportunity Clause and Section 7.2 of the Illinois Department of Human Rights' Rules and Regulations for Public Contracts adopted as amended on September 17, 1980. If it is determined that the contract awardee's projections reflect an underutilization of minority persons and/or women in any job classification, it shall be advised in writing of the manner in which it is underutilizing and such awardee shall be considered to be in breach of the contract unless, prior to commencement of work on the contract project, it submits revised satisfactory projections or an acceptable written affirmative action plan to correct such underutilization including a specific timetable geared to the completion stages of the contract.
- (c) The Department of Transportation shall provide to the Department of Human Rights a copy of the contract awardee's Employee Utilization Form, a copy of any required written affirmative action plan, and any written correspondence related thereto. The Department of Human Rights may review and revise any action taken by the Department of Transportation with respect to these requirements.



**RETURN WITH BID**

**Contract No. 60B01  
LAKE County  
Section 119R-2  
Project ACHPP-HPP-NHF-335(9)  
Route FAP 335  
District 1 Construction Funds**

**PART II. WORKFORCE PROJECTION - continued**

- B. Included in "Total Employees" under Table A is the total number of **new hires** that would be employed in the event the undersigned bidder is awarded this contract.

The undersigned bidder projects that: (number) \_\_\_\_\_ new hires would be recruited from the area in which the contract project is located; and/or (number) \_\_\_\_\_ new hires would be recruited from the area in which the bidder's principal office or base of operation is located.

- C. Included in "Total Employees" under Table A is a projection of numbers of persons to be employed directly by the undersigned bidder as well as a projection of numbers of persons to be employed by subcontractors.

The undersigned bidder estimates that (number) \_\_\_\_\_ persons will be directly employed by the prime contractor and that (number) \_\_\_\_\_ persons will be employed by subcontractors.

**PART III. AFFIRMATIVE ACTION PLAN**

- A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **Department of Human Rights**.
- B. The undersigned bidder understands and agrees that the minority and female employee utilization projection submitted herein, and the goals and timetable included under an Affirmative Action Plan if required, are deemed to be part of the contract specifications.

Company \_\_\_\_\_ Telephone Number \_\_\_\_\_

Address \_\_\_\_\_

**NOTICE REGARDING SIGNATURE**

The Bidder's signature on the Proposal Signature Sheet will constitute the signing of this form. The following signature block needs to be completed only if revisions are required.

Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Instructions: All tables must include subcontractor personnel in addition to prime contractor personnel.

Table A - Include both the number of employees that would be hired to perform the contract work and the total number currently employed (Table B) that will be allocated to contract work, and include all apprentices and on-the-job trainees. The "Total Employees" column should include all employees including all minorities, apprentices and on-the-job trainees to be employed on the contract work.

Table B - Include all employees currently employed that will be allocated to the contract work including any apprentices and on-the-job trainees currently employed.

Table C - Indicate the racial breakdown of the total apprentices and on-the-job trainees shown in Table A.

**RETURN WITH BID**

**ADDITIONAL FEDERAL REQUIREMENTS**

In addition to the Required Contract Provisions for Federal-Aid Construction Contracts (FHWA 1273), all bidders make the following certifications.

- A. By the execution of this proposal, the signing bidder certifies that the bidding entity has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. This statement made by the undersigned bidder is true and correct under penalty of perjury under the laws of the United States.
- B. CERTIFICATION, EQUAL EMPLOYMENT OPPORTUNITY:
1. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause. YES \_\_\_\_\_ NO \_\_\_\_\_
  2. If answer to #1 is yes, have you filed with the Joint Reporting Committee, the Director of OFCC, any Federal agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements of those organizations? YES \_\_\_\_\_ NO \_\_\_\_\_

**RETURN WITH BID**

**Contract No. 60B01  
LAKE County  
Section 119R-2  
Project ACHPP-HPP-NHF-335(9)  
Route FAP 335  
District 1 Construction Funds**

PROPOSAL SIGNATURE SHEET

The undersigned bidder hereby makes and submits this bid on the subject Proposal, thereby assuring the Department that all requirements of the Invitation for Bids and rules of the Department have been met, that there is no misunderstanding of the requirements of paragraph 3 of this Proposal, and that the contract will be executed in accordance with the rules of the Department if an award is made on this bid.

(IF AN INDIVIDUAL) Firm Name \_\_\_\_\_  
Signature of Owner \_\_\_\_\_  
Business Address \_\_\_\_\_  
\_\_\_\_\_

---

(IF A CO-PARTNERSHIP) Firm Name \_\_\_\_\_  
By \_\_\_\_\_  
Business Address \_\_\_\_\_  
Name and Address of All Members of the Firm: \_\_\_\_\_  
\_\_\_\_\_

---

(IF A CORPORATION) Corporate Name \_\_\_\_\_  
By \_\_\_\_\_  
Signature of Authorized Representative \_\_\_\_\_  
Typed or printed name and title of Authorized Representative \_\_\_\_\_

(IF A JOINT VENTURE, USE THIS SECTION FOR THE MANAGING PARTY AND THE SECOND PARTY SHOULD SIGN BELOW) Attest \_\_\_\_\_  
Signature \_\_\_\_\_  
Business Address \_\_\_\_\_

---

(IF A JOINT VENTURE) Corporate Name \_\_\_\_\_  
By \_\_\_\_\_  
Signature of Authorized Representative \_\_\_\_\_  
Typed or printed name and title of Authorized Representative \_\_\_\_\_

Attest \_\_\_\_\_  
Signature \_\_\_\_\_  
Business Address \_\_\_\_\_

If more than two parties are in the joint venture, please attach an additional signature sheet.

RETURN WITH BID



Division of Highways
Proposal Bid Bond
(Effective November 1, 1992)

Item No.
Letting Date

KNOW ALL MEN BY THESE PRESENTS, That We

as PRINCIPAL, and

held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in Article 102.09 of the "Standard Specifications for Road and Bridge Construction" in effect on the date of invitation for bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH, That Whereas, the PRINCIPAL has submitted a bid proposal to the STATE OF ILLINOIS, acting through the Department of Transportation, for the improvement designated by the Transportation Bulletin Item Number and Letting Date indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents, submit a DBE Utilization Plan that is accepted and approved by the Department; and if, after award by the Department, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents including evidence of the required insurance coverages and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to make the required DBE submission or to enter into such contract and to give the specified bond, the PRINCIPAL pays to the Department the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the Department may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the Department determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then Surety shall pay the penal sum to the Department within fifteen (15) days of written demand therefor. If Surety does not make full payment within such period of time, the Department may bring an action to collect the amount owed. Surety is liable to the Department for all its expenses, including attorney's fees, incurred in any litigation in which it prevails either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this day of A.D.,

PRINCIPAL SURETY
(Company Name)
By: (Signature & Title) By: (Signature of Attorney-in-Fact)

Notary Certification for Principal and Surety

STATE OF ILLINOIS,
COUNTY OF

I, a Notary Public in and for said County, do hereby certify that and

(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL and SURETY, appeared before me this day in person and acknowledged respectively, that they signed and delivered said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this day of, A.D.

My commission expires Notary Public

In lieu of completing the above section of the Proposal Bid Form, the Principal may file an Electronic Bid Bond. By signing below the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the State of Illinois under the conditions of the bid bond as shown above.

Electronic Bid Bond ID# Company/Bidder Name Signature and Title

# PROPOSAL ENVELOPE



## PROPOSALS

for construction work advertised for bids by the Illinois Department of Transportation

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

Bidders should use an IDOT proposal envelope or affix this form to the front of a 10" x 13" envelope for the submittal of bids. If proposals are mailed, they should be enclosed in a second or outer envelope addressed to:

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

### **NOTICE**

**Individual bids, including Bid Bond and/or supplemental information if required, should be securely stapled.**

# CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

## NOTICE

None of the following material needs to be returned with the bid package unless the special provisions require documentation and/or other information to be submitted.

**Contract No. 60B01  
LAKE County  
Section 119R-2  
Project ACHPP-HPP-NHF-335(9)  
Route FAP 335  
District 1 Construction Funds**



**Illinois Department of Transportation**



## NOTICE TO BIDDERS

- 1. TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m., September 21, 2007. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 60B01  
LAKE County  
Section 119R-2  
Project ACHPP-HPP-NHF-335(9)  
Route FAP 335  
District 1 Construction Funds**

**Replacement of the bridge carrying IL Route 60 over Tri-State Tollway (SN 049-2012) pavement reconstruction along IL Route 60 from Riverwoods Road Boulevard to Saunders Road/Field Drive and resurfacing of the Riverwoods Road Boulevard intersection, located in Lake Forest and Mettawa.**

- 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

Milton R. Sees, Acting Secretary

BD 351 (Rev. 01/2003)

INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2007

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS and frequently used RECURRING SPECIAL PROVISIONS.

SUPPLEMENTAL SPECIFICATIONS

Std. Spec. Sec.

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No Supplemental Specifications this year.

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**STATE OF ILLINOIS**

**SPECIAL PROVISIONS**

The following Special Provisions supplement the “Standard Specifications for Road and Bridge Construction,” adopted January 1, 2007 (hereinafter referred to as the Standard Specifications): the latest edition of the “Illinois Manual on Uniform Traffic Control Devices for Streets and Highways”, and the “Manual of Test Procedures for Materials” in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of F.A.P. 335 (Illinois Route 60) over I-94 (Tri-State Tollway), Project ACHPP-HPP-NHF-0335 (009), Section 119R-2, Lake County and in case of conflict with any or part or parts of said specifications, the said Special Provisions shall take precedence and shall govern.

FAP 335 (Illinois Route 60) over I-94 (Tri-State Tollway)  
Project ACHPP-HPP-NHF-0335 (009)  
Section: 119R-2  
County: Lake  
Contract No.: 60B01

**Location of Project**

This improvement on Illinois Route 60 begins at Station 432+83.12, at the western end of the intersection with Riverwoods Road/Boulevard, and extends in an easterly direction to Station 470+56.84, a point west of the intersection with Field Drive/Saunders Road. Improvements to and along the ramps leading to/from the Tri-State Tollway are also included in the proposed improvements. The roadway improvement gross length is 5,191 Feet (0.98 miles), which includes the work along Illinois Route 60 and the Tollway ramps. The improvements are located with the City of Lake Forest and the Village of Mettawa.

**Description of Project**

The work includes the removal and replacement of Illinois Route 60 over I-94 (Tri-State Tollway) (Proposed SN 049-2012). The proposed bridge cross section will consist of three 12 foot through lanes and two 12 foot left turn lanes in each direction separated by a 6 foot wide raised concrete median. A 14 foot wide bicycle path will be accommodated on the westbound side of the bridge and a 5 foot wide raised sidewalk on the eastbound side of the bridge. The overall bridge superstructure width will be 152'-7" and the approximate length will be 246 feet. The structure will be a two span continuous steel plate girder superstructure supported on integral abutments and a pile supported multi-column bent concrete pier.

Widening and resurfacing of the approach roadway along Illinois Route 60 (approximately 3,770 ft.) will also be performed. The typical section consists of three 12 foot lanes in each direction separated by a variable median width. There will be one 12 foot exclusive right turn lane in each direction, an exclusive westbound left turn lane, and variable width median at Riverwoods Boulevard/Riverwoods Road. Two 12 foot left turn lanes with barrier median will be provided at Field Drive/Saunders Road. B-6.24 concrete curb and gutter is typical.

A portion of the Illinois State Tollway Highway Authority interchange ramps will also be reconstructed (approximately 700 feet southbound entrance/exit and 1,000 feet northbound entrance/exit). Dual left and right turn lanes will be provided on exit ramps. Entrance ramps will accommodate dual left turn lanes and single right turn lanes.

A new retaining wall along eastbound Illinois Route 60 will be constructed, east of Saunders Road. The wall is anticipated to be approximately 450 feet long and have a 4 foot maximum height.

### **Maintenance of Roadways**

Effective: September 30, 1985

Revised: November 1, 1996

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

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

**STATUS OF UTILITIES TO BE ADJUSTED**

Effective: January 30, 1987

Revised: July 1, 1994

Utility companies involved in this project have provided the following estimated dates:

<u>Name of Utility</u>	<u>Type</u>	<u>Location</u>	<u>Estimated Dates for Start and Completion of Relocation or Adjustments</u>
Comcast Cable TV	CATV Underground	At Riverwoods Drive Sta. 433+24 and Sta. 433+48 – 434+33	Approximately 30 days need to relocate facilities.
----- ----- ComEd	Power (underground conflict)	IL 60 (Southside) at Riverwoods 434+36 – 435+28 430+14 – 439+64 441+75 – 449+00 451+25 – 458+93 459+20 461+50 467+30	----- ----- IL 60 (Southside) 14 poles, 12 duct system, and 4 duct system are in conflict. Abandon and remove all the above and move this to a new 6 duct conduit system (4,000 feet), (4) switchgears, dir bore a steel casing under the tollway, and 16,000 feet of primary cable along the north side of IL 60 will take approximately 160 days. Work to begin by the end of September, 2007.
ComEd (continued)		Southbound Entrance Ramp 119+28 Northbound Exit Ramp 199+08  IL 60 (Northside) 441+90 – 449+10 451+40 – 457+40 459+20 – 460+60 433+97 – 434+27 433+46 – 434+33 Southbound Exit Ramp 117+30 Northbound Entrance Ramp 201+43	
	Aerial Conflicts	460+43 – 470+57 (south side) IL 60	
----- ----- North Shore Gas	24" Gas Main	(north side) IL 60 433+42 – 434+36 434+36 – 439+76 (Bridge) 441+75 – 449+40 451+16 – 458+93 464+44 – 469+54	
North Shore Gas	4" Gas Main	(Southbound ) Exit Ramp 117+60 (Northbound) Exit Ramp 200+90 Field Drive 20+67	----- ----- Removing and replacing the 24'

		Underground Telephone Cable	Saunders Road 6+00 – 9+50 ----- At Riverwoods 433+36 – 434+52 (South side) IL 60 ----- 435+10 – 439+60 ----- 441+75 – 449+95 458+30 – 459+64 (Southbound) Entrance Ramp 119+65 (North side) IL 60 450+45 – 459+00 451+35 – 458+38 (Northbound) Exit ----- Ramp 119+75 (Northbound) Entrance Ramp 200+55 – 202+70 & 205+21	gas main in conflict with the bridge piers and abutment will take 30 days. Additional conflicts will take approximately 60 days to relocate.
----- ----- AT&T Illinois				
AT&T (continued)	Illinois	Fiber Optic	----- Saunders Road 8+75 – 9+54 (South side) IL 60 433+00 – 459+70 ----- (South side) IL 60 433+00 – 459+70 459+70 – 470+57 -----	Approx. 4000 feet of duct will be in conflict Aerial will be relocated to underground Approximately 60 days needed to relocate facilities
----- ----- TDS Metrocom		Buried Fiber Optic and MH	----- (South side) IL 60 435+00 – 459+70 Crosses IL 60 435+00 ----- (North side) IL 60 At Field Drive 461+45 – 467+25 -----	
----- ----- AT&T Local Service		Buried Fiber Optic	----- 12 inch Water Main Crosses IL 60 439+30 -----	
----- ----- Abbott Laboratories			----- (North side) IL 60 434+35 – 437+00 IL 60 Crossing at 434+42 (Southbound) Exit ----- Ramp 115+85 (Northbound) -----	1400 feet to be relocated, Approximately 15 working days to place duct, fiber optic cable splicing, and removals.
Adesta, (ISTHA)	LLC	Fiber Optic		

<p>-----        ----        Lake County Public Works</p>	<p>Entrance Ramp        202+58        (North side) IL 60        451+55 – 458+85</p>	<p>Approximately 4 weeks needed to relocate facilities</p>
<p>-----        ----        AboveNet, Inc.</p>	<p>-----        Shares duct space with AT&amp;T LS        (South side) IL 60</p>	<p>-----        -----        Approximately 45 days to relocate facilities in conflict</p>
		<p>ISTHA utility</p>
		<p>-----        -----        To abandon / retire all water main from Riverwoods to Field Drive, 3 weeks to do this work which will be done in the summer of '07.</p>
		<p>-----        -----        Will need 45 days to splice and test their facility once AT&amp;TLS finishes the relocations</p>

The above represents the best information available to the Department and is included for the convenience of the bidder. The applicable portions of Articles 105.07 and 107.31 of the Standard Specifications shall apply.

**Tollway Permit and Bond**

Effective: January 13, 1989

The Contractor will be required to obtain a permit from the Illinois State Toll Highway Authority (ISTHA) in accordance with Article 107.04 of the Standard Specifications prior to initiating any lane closures on the Tollway or doing any work on the ISTHA right of way. As part of the permit, the Contractor will be required to post a surety bond with the ISTHA.

The Contractor will furnish a copy of the authorized permit to the Engineer.

**Completion Date Plus Working Days**

Effective: September 30, 1985

Revised: January 1, 2007

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

"When a completion date plus working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by **11:59 PM on December 1, 2008** except as specified herein.

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

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

**Interim Completion Date Through Stage 2 Maintenance of Traffic**

The Contractor shall complete, by May 1, 2008, all work as shown on the plans and/or specified in the contract specifications included within maintenance of traffic stages 1, 1A, and 2 (provision for two lanes of traffic in each direction between project reconstruction limits at approximately Riverwoods Road/ Riverwoods Boulevard to the west and Saunders Road/Field Drive to the east). This is necessary to minimize the duration of lane reductions on IL 60.

**Failure to Complete the Work Through Stage 2 Maintenance of Traffic on Time**

Should the Contractor fail to complete the work on or before the completion date specified in the Special Provision for Interim Completion Date for Stage 2 Maintenance of Traffic, the Contractor shall be liable to the Department in the amount of \$2,550 (in accordance with Article 108.09), not as a penalty but as liquidated damages, for each calendar day or portion thereof of overrun in the contract time.

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

Article 108.09 for "Failure to Complete the Work on Time" shall apply to this Special Provision.

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

**Porous Granular Embankment, Subgrade**

Effective: September 30, 1985

Revised: January 1, 2007

This work consists of furnishing, placing, and compacting porous granular material to the lines and grades shown on the plans or as directed by the Engineer in accordance with applicable portions of Section 207. The material shall be used as a bridging layer over soft, pumpy, loose soil and for placing under water and shall conform with Article 1004.04 except the gradation shall be as follows:

1. Crushed Stone, Crushed Blast Furnace Slag, and Crushed Concrete

<u>Sieve Size</u>	<u>Percent Passing</u>
*6 in. (150 mm)	97 ± 3
*4 in. (100 mm)	90 ± 10
2 in. (50 mm)	45 ± 25
No. 200 (75 µm)	5 ± 5

2. Gravel, Crushed Gravel and Pit Run Gravel

<u>Sieve Size</u>	<u>Percent Passing</u>
*6 in. (150 mm)	97 ± 3
*4 in. (100 mm)	90 ± 10
2 in. (50 mm)	55 ± 25
No. 4 (4.75 mm)	30 ± 20
No. 200 (75 µm)	5 ± 5

\*For undercut greater than 18 inches (450 mm) the percent passing the 6 inch (150 mm) sieve may be 90 ± 10 and the 4 inch (100 mm) sieve requirements eliminated.

The porous granular material shall be placed in one lift when the total thickness to be placed is 2 feet (600 mm) or less or as directed by the Engineer. Each lift of the porous granular material

shall be rolled with a vibratory roller meeting the requirements of Article 1101.01(g) to obtain the desired keying or interlock and compaction. The Engineer shall verify that adequate keying has been obtained.

A 3 inch (75 mm) nominal thickness top lift of capping aggregate having a gradation of CA 6 will be required when Aggregate Subgrade is not specified in the contract and Porous Granular Embankment, Subgrade will be used under the pavement and shoulders. Capping aggregate will not be required when embankment meeting the requirements of Section 207 or granular subbase is placed on top of the porous granular material.

Construction equipment not necessary for the completion of the replacement material will not be allowed on the undercut areas until completion of the recommended thickness of the porous granular embankment subgrade.

Full depth subgrade undercut should occur at limits determined by the Engineer. A transition slope to the full depth of undercut shall be made outside of the undercut limits at a taper of 1 foot (300 mm) longitudinal per 1 inch (25 mm) depth below the proposed subgrade or bottom of the proposed aggregate subgrade when included in the contract.

Method of Measurement. This work will be measured for payment in accordance with Article 207.04. When specified on the contract, the theoretical elevation of the bottom of the aggregate subgrade shall be used to determine the upper limit of Porous Granular Embankment, Subgrade. The volume will be computed by the method of average end areas.

Basis of Payment. This work shall be paid for at the contract unit price per cubic yard (cubic meter) for POROUS GRANULAR EMBANKMENT, SUBGRADE which price shall include the capping aggregate, when required.

The Porous Granular Embankment, Subgrade shall be used as field conditions warrant at the time of construction. No adjustment in unit price will be allowed for an increase or decrease in quantities from the estimated quantities shown on the plans.

**Aggregate Subgrade, 12" (300 mm)**

Effective: May 1, 1990

Revised: January 1, 2007

This work shall be done in accordance with the applicable portions of Section 207. The material shall conform to Article 1004.04 except as follows:

1. Crushed Stone, Crushed Blast Furnace Slag, and Crushed Concrete will be permitted. Steel slag and other expansive materials as determined through testing by the Department will not be permitted.

<u>Sieve Size</u>	<u>Percent Passing</u>
6 in. (150 mm)	97 ± 3
4 in. (100 mm)	90 ± 10
2 in. (50 mm)	45 ± 25
No. 200 (75 µm)	5 ± 5

2. Gravel, Crushed Gravel, and Pit Run Gravel

<u>Sieve Size</u>	<u>Percent Passing</u>
6 in. (150 mm)	97 ± 3
4 in. (100 mm)	90 ± 10
2 in. (50 mm)	55 ± 25
No. 4 (4.75 mm)	30 ± 20
No. 200 (75 μm)	5 ± 5

3. Crushed Concrete with Bituminous Materials\*\*

<u>Sieve Size</u>	<u>Percent Passing</u>
6 in. (150 mm)	97 ± 3
4 in. (100 mm)	90 ± 10
2 in. (50 mm)	45 ± 25
No. 4 (4.75 mm)	20 ± 20
No. 200 (75 μm)	5 ± 5

\*\*The Bituminous material shall be separated and mechanically blended with the crushed concrete so that the bituminous material does not exceed 40% of the final products. The top size of the bituminous material in the final product shall be less than 4 inches (100 mm) and shall not contain more than 10.0% steel slag RAP or any material that is considered expansive by the Department.

The Aggregate subgrade shall be placed in two lifts consisting of a 9 inch (225 mm) and variable nominal thickness lower lift and a 3 inch (75 mm) nominal thickness top lift of capping aggregate having a gradation of CA 6. The CA 6 may be blended as follows. The bituminous materials shall be separated and mechanically blended with interlocking feeders with crushed concrete or natural aggregate, in a manner that the bituminous material does not exceed 40% of the final product. This process shall be approved by the engineer prior to start of production. The top side of the bituminous material in the final products shall be less than 1 ½ inches (37.5 mm) and shall not contain any material considered expansive by the department. Reclaimed Asphalt Pavement (RAP) (having a maximum of 10% steel slag RAP) meeting the requirements of Article 1004.07 and having 100% passing the 3 inch (75 mm) sieve and well graded down through fines may also be used as capping aggregate. IDOT testing of the RAP material will be used in determining the percent of steel slag or Expansive Material. When the contract specifies that an aggregate subbase is to be placed on the Aggregate Subgrade, the 3 inches (75 mm) of capping aggregate will be eliminated. A vibratory roller meeting the requirements of Article 1101.01(g) shall be used to roll each lift of material to obtain the desired keying or interlock and necessary compaction. The Engineer will verify that adequate keying has been obtained.

When a recommended remedial treatment for unstable subgrades is included in the contract, the lower lift of Aggregate Subgrade may be placed simultaneously with the material for Porous Granular Embankment, Subgrade when the total thickness to be placed is 2 feet (600 mm) or less.

Method of Measurement.

Contract Quantities. Contract quantities shall be in accordance with Article 202.07.

Measured Quantities. Aggregate subgrade will be measured in place and the area computed in square yards (square meters).

Basis of Payment. This work will be paid for at the contract unit price per square yard (square meter) for AGGREGATE SUBGRADE, 12" (AGGREGATE SUBGRADE, 300 mm).

**Reclaimed Asphalt Pavement for Non-Porous Embankment and Backfill**

Effective: April 1, 2001

Revised: January 1, 2007

Add the following sentence to Article 1004.05 (a) of the Standard Specifications:

"Reclaimed Asphalt Pavement (RAP) may be used as aggregate in Non-porous Granular Embankment and Backfill. The Rap material shall be reclaimed asphalt pavement material resulting from the cold milling or crushing of an existing hot-mix bituminous concrete pavement structure, including shoulders. RAP containing contaminants such as earth, brick, concrete, sheet asphalt, sand, or other materials identified by the Department will be unacceptable until the contaminants are thoroughly removed.

Add the following sentence to Article 1004.05 (c)(2) of the Standard Specifications:

"One hundred percent of the RAP when used shall pass the 3 inch (75 mm) sieve. The RAP shall be well graded from coarse to fine. RAP that is gap-graded or single-sized will not be accepted."

**Aggregate Surface Course for Temporary Access**

Effective: April 1, 2001

Revised: January 2, 2007

Revise Article 402.10 of the Standard Specifications to read:

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

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

- (a) Private Entrance. The minimum width shall be 12 ft (3.6 m). The minimum compacted thickness shall be 6 in. (150 mm). The maximum grade shall be eight percent, except as required to match the existing grade.

- (b) Commercial Entrance. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The maximum grade shall be six percent, except as required to match the existing grade.
- (c) Road. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

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

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

Add the following to Article 402.12 of the Standard Specifications:

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

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

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

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

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

### **Storm Sewer Adjacent to or Crossing Water Main**

Effective: February 1, 1996

Revised: January 1, 2007

This work consists of constructing storm sewer adjacent to or crossing a water main, at the locations shown on the plans. The material and installation requirements shall be according to

the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and the applicable portions of Section 550 of the Standard Specifications; which may include concrete collars and encasing pipe with seals if required.

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

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

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

**Backfilling Storm Sewer Under Roadway**

Effective: September 30, 1985

Revised: July 2, 1994

For storm sewer constructed under the roadway, backfilling methods two and three authorized under the provisions of Article 550.07 will not be allowed.

**Concrete Barrier (District One)**

Effective: February 11, 2004

Revised: January 1, 2007

Add the following paragraph to Article 637.02 of the Standard Specifications:

"The coarse aggregate to be used in the concrete barrier walls shall conform to the requirement for coarse aggregate used in Class BS concrete according to Article 1004.01(b), paragraph 2."

**Work Zone Traffic Control (Lump Sum Payment)**

Effective: February 1, 1996

Revised: January 1, 2007

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

Method of Measurement: All traffic control (except traffic control pavement marking) indicated on the traffic control plan details and specified in the Special Provisions will be measured for payment on a lump sum basis. Traffic control pavement markings will be measured per foot (meter).

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

SHORT TERM PAVEMENT MARKING, TEMPORARY PAVEMENT MARKING and PAVEMENT MARKING TAPE TYPE III will be paid for separately.

### **Traffic Control Plan**

Effective: September 30, 1985

Revised: January 1, 2007

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

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

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

### STANDARDS

70101, 701501, 701601, 701606, 701701, 702001, 704001,

### DETAILS

Maintenance of Traffic Plans, Stages of Construction  
Traffic Control and Protection for Side Roads, Intersections, and Driveways  
Temporary Concrete Barrier for Stage Construction  
Temporary Pavement Markings, Letters and Symbols  
Traffic Control and Protection at Turn Bays (To Remain Open to Traffic)  
Temporary Information Signing  
Signing for Flagging at Work Zone Openings

### SPECIAL PROVISIONS

Maintenance of Roadways  
Traffic Control Plan  
Work Zone Traffic Control (Lump Sum Payment)  
Temporary Information Signing  
Impact Attenuators, Temporary  
Reflective Sheeting on Channelizing Devices

## **Epoxy Coating on Reinforcement (District One)**

Effective: January 1, 2007

For work outside the limits of bridge approach pavement, all references in the Highway Standards and Standard Specifications for reinforcement, dowel bars, tie bars and chair supports for pavement, shoulders, curb, gutter, combination curb and gutter and median shall be epoxy coated, unless noted on the plan.

## **Temporary Information Signing**

Effective: November 13, 1996

Revised: January 2, 2007

### Description.

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

### Materials.

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

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

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

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

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

Note 4. The overlay panels shall be 0.08 inch (2 mm) thick.

## **GENERAL CONSTRUCTION REQUIREMENTS**

### Installation.

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

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

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

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

**Method Of Measurement.**

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

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

**Basis Of Payment.**

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

**SEGMENTAL CONCRETE BLOCK WALL**

Effective: January 7, 1999

Revised: July 11, 2007

**Description.** This work shall consist of furnishing the design computations, shop plans, materials, equipment and labor to construct a Segmental Concrete Block Retaining Wall to the limits shown on the plans.

**General.** The wall shall consist of a leveling pad, pre-cast concrete blocks, select granular backfill and, if required by the design, soil reinforcement. The wall shall be designed and constructed according to the lines, grades, and dimensions shown on the contract plans and approved shop plans.

**Submittals.** The wall supplier shall submit design computations and shop plans to the Engineer. The shop plans shall be sealed by an Illinois Licensed Professional Engineer and shall include all details, dimensions, quantities, and cross sections necessary to construct the wall and shall include, but not be limited to, the following items:

- (a) Plan, elevation, and cross section sheet(s) for each wall showing the following:
  - (1) A plan view of the wall indicating the offsets from the construction centerline to the first course of blocks at all changes in horizontal alignment. These shall be calculated using the offsets to the front face of the block shown on the contract plans and the suppliers proposed wall batter. The plan view shall indicate bottom (and top course of block when battered), the excavation and select granular backfill limits as well as any soil reinforcing required by the design. The centerline of any drainage structure or pipe behind or passing through/under the wall shall also be shown.
  - (2) An elevation view of the wall, indicating the elevation and all steps in the top course of blocks along the length of the wall. The top of these blocks shall be at or above the theoretical top of block line shown on the contract plans. This view shall also

- show the steps and proposed top of leveling pad elevations as well as the finished grade line at the wall face specified on the contract plans. These leveling pad elevations shall be located at or below the theoretical top of leveling line shown on the contract plans. The location, size, and length of any soil reinforcing connected to the blocks shall be indicated.
- (3) Typical cross section(s) showing the limits of the select granular backfill, soil reinforcement if used in the design. The right-of-way limits shall be indicated as well as the proposed excavation, cut slopes, and the elevation relationship between existing ground conditions and proposed grades.
- (4) All general notes required for constructing the wall.
- (b) All details for the leveling pads, including the steps, shall be shown. The theoretical top of the leveling pad shall either be below the anticipated frost depth or 1.5 ft. (450 mm) below the finished grade line at the wall face, whichever is greater; unless otherwise shown on the plans. The minimum leveling pad thickness shall be 6 in. (152 mm)
- (c) Cap blocks shall be used to cover the top of the standard block units. The top course of blocks and cap blocks shall be stepped to satisfy the top of block line shown on the contract plans.
- (d) All details of the block and/or soil reinforcement placement around all appurtenances located behind, on top of, or passing through the wall shall be clearly indicated. Any modifications to the design of these appurtenances to accommodate a particular design arrangement shall also be submitted.
- (e) All details of the blocks, including color and texture shall be shown. The exterior face shall preferably be straight, textured with a "split rock face" pattern, and dark gray in color unless otherwise stated on the plans.
- (f) All block types (standard, cap, corner, and radius turning blocks) shall be detailed showing all dimensions.
- (g) All blocks shall have alignment/connection devices such as shear keys, leading/trailing lips, or pins. The details for the connection devices between adjacent blocks and the block to soil reinforcement shall be shown. The block set back or face batter shall be limited to 20 degrees from vertical, unless otherwise shown by the plans.

**Submittals.** Submittals shall be according to Article 1042.03(b) of the Standard Specifications. No work or ordering of materials for the structure shall be done by the Contractor until the submittal has been approved in writing by the Engineer.

**Materials.** The materials shall meet the following requirements:

(a) Pre-cast Concrete Block: The block proposed for use shall be produced according Article 1042.02 and the requirements of ASTM C1372 except as follows:

1. Fly ash shall be according to Articles 1010.01 and 1010.02(b).
2. Ground granulated blast-furnace slag shall be according to Articles 1010.01 and 1010.05.
3. Aggregate shall be according to Articles 1003.02 and 1004.02, with the exception of gradation.
4. Water shall be according to Section 1002.
5. Testing for freeze-thaw durability will not be required. However, unsatisfactory field performance as determined by the Department will be cause to prohibit the use of the block on Department projects.

(b) Select Granular Backfill: The material behind the blocks and above a 1:1 slope extending upward from either the back of the bottom block or soil reinforcement (whichever is greater) shall consist of either a coarse aggregate according to Article 1004.05(a), or a fine aggregate according to the first sentence of Article 1003.04(a). The aggregate used shall also meet the following:

Coarse Aggregate Gradation	CA 6 thru CA 16 (Article 1004.01(c))
Fine Aggregate Gradation	FA 1, FA 2, or FA 20 (Article 1003.01(c))
Coarse Aggregate Quality 1004.01(b))	Minimum Class C (Article
Fine Aggregate Quality 1003.01(b))	Minimum Class C (Article
Internal Friction Angle	34° minimum (AASHTO T 236)
pH (if reinforcement is used)	4.5 to 9 (AASHTO T 289)

When a fine aggregate is selected, the rear of all block joints shall be covered by a non-woven needle punch geotextile filter material according to Article 1080.05 of the Standard Specifications and shall have a minimum permeability according to ASTM D4491 of 0.008 cm/sec. All fabric overlaps shall be 6 in. (150 mm) and non-sewn. As an alternative to the geotextile, a coarse aggregate shall be placed against the back face of the blocks to create a minimum 12 in. (300 mm) wide continuous gradation filter to prevent the select fill material from passing through the block joints.

(c) Leveling pad: The material shall be either Class SI concrete according to Article 1020.04 or compacted coarse aggregate according to Articles 1004.04, (a) and (b). The compacted coarse aggregate gradation shall be CA 6 or CA 10.

(d) Soil Reinforcement: If soil reinforcement is required by the approved design, the Contractor shall submit a manufacturer's certification for the soil reinforcement properties which equals or exceeds those required in the design computations. The soil reinforcement shall be

manufactured from high density polyethylene (HDPE) uniaxial or polypropylene biaxial resins or high tenacity polyester fibers with a PVC coating, stored between -20 and 140° F (-29 and 60° C). The following standards shall be used in determining and demonstrating the soil reinforcement capacities:

ASTM D638 Test Method for Tensile Properties of Plastic  
ASTM D1248 Specification for Polyethylene Plastics Molding and Extrusion Materials  
ASTM D4218 Test Method for Carbon Black Content in Polyethylene Compounds  
ASTM D5262 Test Method for Evaluating the Unconfined Tension Creep Behavior of Geosynthetics  
GG1-Standard Test Method for Geogrid Rib Tensile Strength  
GG2-Standard Test Method for Geogrid Junction Strength  
GG4-Standard Practice for Determination of the Long Term Design Strength of Geogrid  
GG5-Standard Practice for Evaluating Geogrid Pullout Behavior

**Design Criteria.** The design shall be according to AASHTO Specifications and commentaries for Earth Retaining Walls or FHWA Publication No. HI-95-038, SA-96-071 and SA-96-072. The wall supplier shall be responsible for all internal stability aspects of the wall design.

Internal stability design shall insure that adequate factors of safety against overturning and sliding are present at each level of block. If required by design, soil reinforcement shall be utilized and the loading at the block/soil reinforcement connection as well as the failure surface must be indicated. The calculations to determine the allowable load of the soil reinforcement and the factor of safety against pullout shall also be included. The analysis of settlement, bearing capacity, and overall slope stability are the responsibility of the Department.

External loads such as those applied through structure foundations, from traffic or railroads, slope surcharge etc., shall be accounted for in the internal stability design. The presence of all appurtenances behind, in front of, mounted upon, or passing through the wall volume such as drainage structures, utilities, structure foundation elements, or other items shall be accounted for in the internal stability design of the wall.

**Construction Requirements.** The Contractor shall obtain technical assistance from the supplier during wall erection to demonstrate proper construction procedures and shall include all costs related to this technical assistance in the unit price bid for this item.

The foundation material for the leveling pad and select granular backfill volume shall be graded to the design elevation and compacted according to Article 205.05, except the minimum required compaction shall be 95 percent of the standard laboratory density. Any foundation soils found to be unsuitable shall be removed and replaced as directed by the Engineer and shall be paid for according to Article 109.04.

The select granular backfill lift placement shall closely follow the erection of each course of blocks. All aggregate shall be swept from the top of the block prior to placing the next block lift. If soil reinforcement is used, the select granular backfill material shall be leveled and compacted before placing and attaching the soil reinforcement to the blocks. The soil

reinforcement shall be pulled taut, staked in place, and select fill placed from the rear face of the blocks outward. The lift thickness shall be the lesser of 10 in. (255 mm) loose measurement or the proposed block height.

The select granular backfill shall be compacted according to Article 205.05, except the minimum required compaction shall be 95 percent of the standard laboratory density. Compaction shall be achieved using a minimum of 3 passes of a lightweight mechanical tamper, roller, or vibratory system. The top 12 in. (300 mm) of backfill shall be a cohesive, impervious material capable of supporting vegetation, unless other details are specified on the plans.

The blocks shall be maintained in position as successive lifts are compacted along the rear face of the block. Vertical, horizontal, and rotational alignment tolerances shall not exceed 0.5 in. (12 mm) when measured along a 10 ft. (3 m) straight edge.

**Method of Measurement.** Segmental Concrete Block Wall will be measured by the square foot (square meter) of wall face from the top of block line to the theoretical top of the leveling pad for the length of the wall in a vertical plane, as shown on the contract plans.

**Basis of Payment.** This work will be paid for at the contract unit price per square foot (square meter) for SEGMENTAL CONCRETE BLOCK WALL.

### **Maintenance of Traffic (I-94)**

This Maintenance of Traffic (I-94) special provision amends the provisions Section 701 of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract. It shall only apply to maintenance of traffic on the I-94 mainline and IL 60 entrance and exit ramps within the limits specified in the contract plans.

Replace this section in its entirety with the following:

#### **701.01 Description and Special Conditions**

- (a) General. This work shall consist of the furnishing, installation, maintenance, relocation and removal of all standard signs, barricades, cones, warning lights, flaggers and other devices which are used for the purpose of warning, regulating, directing or otherwise controlling the flow of traffic where a public trafficway must be established and maintained through construction on the Tollway and Local and State Roads included in the work. Standard signs are those signs which appear in the MUTCD and the Illinois Supplement except those in Section 2E through 2J.

The Contractor shall furnish, install, maintain, and remove all specified traffic control devices as well as any additional devices determined necessary by the Engineer in accordance with the Contract Plans, Special Provisions, the latest edition of the

“Manual on Uniform Traffic Control Devices for Streets and Highways” with Illinois Supplement (MUTCD), which manual shall be understood to be a contract document. This work shall also include the furnishing of flaggers for the installation and removal of temporary pavement markings, as required by the Engineer, unless otherwise provided.

In the event of severe weather conditions, the Contractor shall provide additional personnel and equipment to maintain all traffic control devices. In such conditions and in addition to general maintenance requirements, Contractor personnel shall maintain continuous surveillance and shall continuously realign and relocate all traffic control devices displaced by wind, traffic, Contractor operations, or any other cause.

The existence of general roadway illumination shall not relieve the Contractor of his responsibility for furnishing and maintaining any of the protective facilities hereinafter specified.

Whenever workmen are working within 30 feet of the traffic flow, the Contractor shall use a radar emulator to affect reduced traffic speed.

(b) Penalties

- (1) Non Compliance with Specifications. The Contractor will be subject to a penalty of \$1000 or 0.05 percent of the awarded contract value, whichever is greater, per incident per day, to be deducted from the next pay estimate due the Contractor, for each occurrence when the Engineer determines that the Contractor or his Subcontractor is not in full compliance with the Maintenance of Traffic Specifications.
- (2) Failure to Respond. The Contractor shall be required to respond within 1/2 hour to any request from the Engineer for re-aligning, replacing or moving traffic control devices or Temporary concrete barrier, or otherwise re-establishing compliance with the Maintenance of Traffic Specifications. “Respond” is interpreted to mean on the job preparing to make repairs. Failure by the Contractor to so respond shall be grounds for a penalty of \$1000 or 0.05 percent of the awarded contract value, whichever is greater, for each and every occurrence, to be deducted from the next pay estimate due the Contractor.
- (3) Failure to Repair Impact Attenuators, Temporary. If during the term of the Contract, any Impact Attenuators, Temporary furnished and installed by the Contractor is damaged or displaced by any cause or event, the Contractor shall be responsible for repairing, replacing and/or realigning the component modules and restoring the system to the intended configuration.

The Contractor shall complete all such necessary system restoration within 24 hours of notification by the Engineer. Failure to comply with this requirement shall be grounds for a daily penalty of \$1000 or 0.05 percent of the awarded contract value, whichever is greater for each day or portion thereof (after the initial 24 hour period) that the directed restoration remains incomplete, to be deducted from the next pay estimate due the Contractor.

- (4) Loss or Damage to Tollway-Owned Devices. The Contractor will be required to remove all traffic control devices furnished by the Tollway which are installed and maintained by him under the contract and deliver them to the Tollway's Sign Shop in Naperville, IL. All such traffic control devices shall remain in place until specific authorization to relocate the traffic control devices is received from the Engineer for stage changes or modifications of lane closures. The cost of any Tollway-owned signs damaged beyond re-use or lost due to the Contractor's negligence will be deducted from the monies due the Contractor under the item Traffic Control and Protection (Special) pay item at the rate of \$100.00 per square foot of sign so lost or damaged or the sign shall be replaced in - kind.
- (5) Non-Compliance with IDOT Maintenance of Traffic. To ensure a prompt response to incidents involving the integrity of the work zone traffic control devices, the Contractor shall provide a telephone number where a responsible individual can be contacted on a 24-hour-a-day basis. When the Engineer is notified or determines a deficiency exists, he/she shall be the sole judge as to whether the deficiency is an immediate safety hazard. The Contractor shall dispatch sufficient resources within 2 hours of notification to make needed corrections of deficiencies that constitute an immediate safety hazard. Other deficiencies shall be corrected within 12 hours. If the Contractor fails to restore the required traffic control and protection within the time limits specified above, the Engineer will impose a daily monetary deduction for each 24-hour period (or portion thereof) the deficiency exists. This time period will begin with the time of notification to the Contractor and end with the Engineer's acceptance of the corrections. The daily deduction will be \$1000 or 0.05 percent of the awarded contract value, whichever is greater, per day. In addition, if the Contractor fails to respond, the Engineer may correct the deficiencies and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of his/her contractual requirements or responsibilities.

**701.02 Materials.** All materials used for the various traffic control devices shall conform to the applicable requirements of Materials, Division 1000 of the Standard Specifications.

### **701.03 Devices**

- (a) Barricades. Barricade sheeting shall meet the initial minimum brightness values of Article 1106.02.

Type II barricades shall be constructed of non-metallic materials and shall have no rigid stay bracing for the "A" frames. Details of barricade fabrication are to be submitted and approved by the Engineer. Type I barricades shall be constructed of lightweight materials and shall not utilize rigid stay bracing for the "A" frames.

Barricades shall be weighted as required to resist knock-down from wind-blast generated by passing vehicles. Under no circumstances shall weights be placed on top of the barricades.

Unless otherwise specifically provided in these Specifications, the Plans, or the Special Provisions, barricades shall be equipped with steady burning lights meeting the requirements of Article 701.03 (e).

- (b) Cones. Cones used to channelize traffic on the Tollway shall have a nominal height of 28 inches. All cones shall have a broadened, weighted base and shall be made of material that is able to withstand impact without damage to the cones or to vehicles. The Contractor shall certify that they are NCHRP 350 compliant. The dominant color of cones shall be fluorescent orange. All cones shall be kept clean and bright for maximum visibility. The use of cones for lane closures or traffic control during hours of darkness will not be permitted, except in extreme emergency conditions.
- (c) Plastic Drums. Drums shall be 18" minimum diameter, 36" high. Drums shall be non-metallic and have alternating reflectorized orange and reflectorized white horizontal, circumferential stripes 4 inches to 8 inches in width. There shall be at least two orange and at least two white stripes on each drum. If nonreflective spaces are left between the orange and white stripes, they shall be no more than 2 inches in width. All nonreflectorized portions of the drums shall be orange or white. Drums may be slightly conical in shape and may have one or more flat surfaces to minimize rolling when hit.

Drum sheeting shall meet the initial minimum brightness values as shown in Article 1106.02.

Where plastic drums are specified, Type II barricades may be used in lieu of drums. If flashing or steady burning lights are required for drums, this requirement shall be extended to the Type II barricades. Drums and Type II barricades shall not be intermixed within an individual taper or string of devices. This does not prohibit drums from being used in a taper section with Type II barricades being used in the tangent section, or vice versa. If flashing or steady burning lights are not required, the Contractor shall certify the plastic drums are NCHRP 350 compliant.

- (d) Signs. All signs must meet the approval of the Engineer. Such signs shall be either plywood or aluminum for signs under 24 square feet and plywood only for signs over 24 square feet. Signs utilizing a base of fabric, fiberboard or other flexible or frangible material will not be permitted.

Plywood shall be exterior type B-B high density overlay plywood or better conforming to NIST specification PS-1 for construction and industrial plywood. Use 0.50 inch thick plywood for all sign panels.

Abrade, clean, and degrease the face of the plywood panel according to methods recommended by the manufacturer of the retroreflective sheeting. Treat the edges of the plywood panel with an approved edge sealant.

Aluminum shall be flat aluminum sheet conforming to ASTM B209, alloy 6061-T6 or 5052-H38. Thickness shall be 0.080 inch for panels having no dimension greater than 48 inches and 0.125 inch for panels having any dimension more than 48 inches.

Sign faces shall be reflective sheeting meeting the requirements of Section 1106, with appropriate legend and/or symbols. The design features of the signs including such items as shape, color, corner radius, border width, letter size, legend placement and symbol dimensions shall be in accordance with the Plan details and with the publications entitled "Standard Highway Signs" and "Standard Alphabets for Highway Signs" published by the Federal Highway Administration. All sign sheeting shall meet the initial minimum brightness values as shown in Article 1106.01. All diamond-shaped construction warning signs used on mainline, crossroads and ramps shall be fluorescent orange in color.

All temporary sign supports shall be furnished by the Contractor. Portable supports shall be designed and constructed to yield upon impact to minimize hazard to motorists, but shall be sturdy enough to resist knock-down from wind-blast generated by passing vehicles. Sandbags shall be used as needed to provide stability.

Temporary post-mounted signs shall be mounted on wood posts no larger than 4 x 4 inches or on steel or aluminum supports of a size that will not constitute a hazard to motorists and shall be approved by the Engineer.

Construction traffic signs necessary only during working hours shall be removed or covered during non-working hours.

- (e) Warning Lights. There are three types of warning lights which may be specified for use in connection with barricades and signs: Type A, Low Intensity; Type B, High Intensity and Type C, Steady Burn. All are defined as portable, lens directed, enclosed lights emitting a yellow color. Lights shall be in accordance with the current requirements of the ITE Standard for Flashing and Steady Burn Warning Lights.

Unless otherwise shown in the Plans or directed by the Engineer, Type A and Type C lights shall be uni-directional, visible from one side only.

Warning lights shall consist of a metal or plastic case, transistorized electrical circuit, and head. Lights shall be visible for 1,500 feet under normal atmospheric conditions. All lights shall meet the approval of the Engineer.

Warning lights utilizing an internal power source (batteries) shall be so constructed that when batteries are installed, the terminals are on top of the battery. Batteries shall be confined within the case. Terminals on the batteries may be either plug or spring type. All electrical connections shall be of noncorrosive material.

The case for the battery shall be constructed of aluminum, galvanized steel or high impact-resistant plastic. The case shall have vandal-proof fastenings for mounting on barricades or signs. The case shall be weatherproof.

Batteries shall be provided by the Contractor but shall not be installed until the light is ready to be used. The Contractor shall replace all batteries at such times as may be directed by the Engineer.

Each light shall utilize a removable transistor circuit which shall be in a weatherproof, hermetically sealed container. Each light shall have a separate, concealed manual switch that can be activated externally by a special key.

The head for each light shall consist of a housing, reflector, light bulb, and lens(es). The head shall be capable of rotation up to 180 degrees about its vertical axis. The head shall be sealed against outside atmospheric conditions and attached to the case by an acceptable and approved means. The lens shall be 7 inches in diameter and shall be amber in color, in accordance with the requirements of the MUTCD.

Type A and Type C lights shall be equipped with a 0.35 to 0.55 watt bulb or L.E.D. equivalent. Bulbs for high intensity Type B units shall be at least 4 watts or L.E.D. equivalent.

Where warning lights on barricades are required, they shall be installed at a minimum mounting height of 36 inches to the bottom of the lens.

Any lights reported out of order by the Engineer shall be replaced or repaired by the Contractor within 12 hours after notification.

(f) Arrow Boards. Arrow boards shall be used where shown in the plans.

Flashing "pass right" or "left" patterns, other than simultaneous shaft, shall not be used.

It shall be capable of displaying a simultaneously flashing shaft to the right and to the left, as well as a flashing shaft with simultaneous right and left. In addition, each board shall be capable of operating in a caution mode with four or more flashing lamps arranged in a pattern which will not indicate direction.

The boards shall be rectangular in shape and finished in nonreflective flat black with the lamps recess-mounted or with hoods surrounding at least the upper half of the lamps.

The lamps shall be amber 12-volt, sealed beam units, hooded and spaced so as to substantially fill the board. The board shall have a flat black background. All arrow boards shall be composed of at least 5 lighted lamps at an angle of 35 to 60 degrees measured from the horizontal. Shafts for Patterns 2 and 3 shall be composed of at least 4 lighted lamps (3rd pulse) and shall be composed of at least 3 lighted lamps for Pattern 4. Shafts in the bidirectional mode shall be composed of 3 lighted lamps for Types B and C units. A dimmer control shall be provided and shall be capable of varying the lamp voltage from 6.0 volts to 12 volts. Trailer-mounted units shall be

equipped with a photoelectrically operated switch capable of varying the lamp voltage from 6 Volts for nighttime use to 12 Volts for daylight use. Roof-mounted units may be equipped with a manually operated voltage control switch.

The power to operate the arrow board shall be supplied from self-contained batteries, (with or without a solar panel generator), a vehicle's electrical system, a gasoline or diesel fueled generator, or an external power source. Trailer mounted units may be equipped with permanently-mounted fuel tanks no greater than 25 gallons (U.S.) in capacity. Additional fuel shall not be stored near the trailer.

Where external power is used, the cable placement shall meet the approval of the Engineer and all electrical codes applicable to the area shall be observed. When greater than 24 volts is supplied externally, the service cable shall be fused at a location sufficiently removed from the unit so as to leave no live wires exposed at or near the unit in the event of a vehicular collision.

Where batteries are used as the primary power source, they shall be of sufficient capacity to provide, between charging, 11 volts or greater to each of the lamps in any mode for a period of at least 72 continuous hours of operation at full daylight intensity. Units that operate on battery power shall have a permanently-mounted voltmeter which shall be wired so as to measure the voltage available to the lamps.

Trailer-mounted units, utilizing gasoline or diesel fueled generators or external power source, shall be equipped with storage batteries wired so that the unit will automatically switch to battery power in the event of failure of the primary power source. The batteries shall be capable of providing sufficient capacity to operate the units for a minimum of three continuous hours in any mode at 11 volts or greater.

Operations and components of the boards shall be as follows:

Flash Rate: 25 to 40 Flashes/Minute (no lamps shall remain illuminated during "off" time).

Percent on Time: 1st Pulse - 75%  
                          2nd Pulse - 50% Sequencing  
                          3rd Pulse - 25% Patterns  
                          Bidirectional - 50%  
                          Simultaneous - 50%

Board Type: B C

Mounting Truck or Trailer Trailer  
Minimum Bd. Size: 2.5' X 5' 4' X 8'  
Minimum Lamp Size: PAR 36, PAR 46,  
Minimum Candle Power  
at Design Voltage: 7,000 8,800  
Minimum Mounting Height: 6' Truck  
(Pavement to bottom of board) 7' Trailer 7'

- (g) Portable Changeable Message Signs (PCMS). PCMS used to provide advance warning and information on the Tollway should have the front face of the sign covered with a protective material. The color of the elements should be yellow or orange on a black background.

The PCMS should be visible from 1300 feet under both day and night conditions. Each sign character shall be clearly visible from 900 feet minimum. The message should have adjustable display rates, so that the entire message can be read at least twice at the posted speed or the anticipated speed.

The control system should include a display screen for reviewing messages and be capable of maintaining memory when power is interrupted.

The message sign operating software shall be National Transportation Communication Infrastructure Protocol (NTCIP) compliant and must be compatible and functional with Illinois Tollway Traffic Operation Center (TOC) Sign Control Software.

The PCMS should be equipped with a power source and battery back-up to provide continuous operations.

The bottom of the PCMS shall be a minimum of 7 feet above the roadway when operating. This height may be reduced to a minimum of 5 feet during high wind conditions to assure stability of the PCMS.

- (h) Personal Protective Equipment. All personnel, excluding flaggers, working outside of a vehicle (car or truck) within 25 ft of pavement open to traffic shall wear a fluorescent orange, fluorescent yellow/green, or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of ANSI/ISEA 107-2004 for Conspicuity Class 2 garments. Other types of garments may be substituted for the vest as long as the garments have a manufacturer's tag identifying them as meeting the ANSI Class 2 requirements.
- (i) Flagging Equipment. Whenever a flagger is required to be assigned to traffic control for daytime operations, the flagger(s) shall be equipped with a fluorescent orange, fluorescent yellow/green, or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of ANSI/ISEA 107-2004 for Conspicuity Class 2 garments and flagger traffic control paddles. If the flagger is required during nighttime operations, the flagger shall be equipped with a full-body garment of fluorescent orange or fluorescent orange and fluorescent yellow-green meeting the requirements of ANSI/ISEA 107-2004 for Conspicuity Class 3 garments. All maintenance workers are required to wear ANSI Class 3 apparel during nighttime operations.

Hard hats shall be worn by all persons in a construction or maintenance area.

(j) Truck Mounted Attenuators. Truck mounted attenuators, equivalent to Model ALPHA 60 MD manufactured by Energy Absorption Systems, Incorporated of Chicago, Illinois shall be mounted on a vehicle meeting the recommendations of the attenuator manufacturer. These vehicles shall not be used to haul liquid marking materials, solvents or fuels.

(k) Radar Emulator. This device will alert drivers with radar detectors. Devices originally designed or intended for applications in the measurement of speed, security systems, ingress/egress controls, traffic counting or traffic signal activations shall not be used. The device's configuration shall accommodate an efficient combined forward and rear facing coupled application, resulting in a single, horizontally mounted two-way operational unit.

Devices and mounting brackets considered under this specification shall be constructed of DOW-555 ABS or equivalent material and shall not possess painted or unpainted exposed metallic parts or surfaces. All internal components shall be encapsulated in Thermoset Type EP-281 epoxy potting material or equivalent, and shall comply with the UL Standard Flame Retardant Test. Shore hardness shall be rated at a minimum of 60 by the ASTM-D-2240 method. The device shall meet or exceed the horizontal burning test of 94HB at a 1/8" test section. The device shall possess rigidity characteristics and impact resistance commensurate with the Military Drop Test, Mil/Std - 331, Test 111.1. The device shall not exceed outside dimensions of 6 inches by 3 inches.

The device shall be capable of uninterrupted performance in diverse and extreme climatic conditions. The unit shall operate efficiently from -40 degrees Fahrenheit to +185 degrees Fahrenheit, and shall not exceed a maximum frequency of 5 MHz throughout these temperature ranges. All devices considered under this specification shall be waterproof, and upon the application of power, immediately operate per specification.

The maximum field strength of the primary beam shall not cause it to exceed 2,600 linear feet as measured from the front of the device. The device shall have provision for an optional accessory remote intrusion alarm signal. The primary beam width shall not exceed 160 degrees, or be less than 80 degrees on the horizontal plane, and shall be at least 40 degrees on the vertical plane. The device shall employ BeamVaricator™ or equivalent circuitry, enabling continuous verification of the device's operational status. Confirmation of status shall be evidenced via a bi-polar light emitting diode located to the front of the device, confirming a primary beam transmission, field disturbance and self-evaluation. All devices considered shall possess a 'self-testing capability' - enabling visual confirmation of a positive indication of a system failure.

This specification specifically excludes devices employing oscillating GUNN diode sources' as the signal source. The device shall not create interference for operating police radar. All devices considered must operate per specification from power sources ranging from 6 Volts DC to 28 Volts DC and shall not exceed a current consumption of 65 mA maximum - 50 mA typical.

A device meeting these requirements is available from The Toman Group, Inc., 636-386-2278.

- (l) Barrier Delineators. Barrier delineators are to be installed by the Contractor in accordance with IDOT Recurring Special Provision titled "Guardrail and Barrier Wall Delineation". All barrier delineators, new and existing, shall be kept clean for optimal visibility.

#### **701.04 General Requirements**

- (a) Coordination. Prior to beginning construction the Contractor shall be required to attend a meeting arranged by the Department and the Engineer with representatives of the Tollway and Contractors from adjoining Contracts. The purpose of this meeting shall be to ascertain the exact scheduling of traffic phases, identify any immediate changes necessary, and to coordinate construction staging to provide consistent roadway conditions. It is mandatory that any intermediate traffic phase changes, staging changes or other disruptions of traffic flow will be coordinated at these meetings. No changes or disruptions will be allowed unless prior approval in writing is given by the Engineer. In order to maintain close coordination during the prosecution of the work, the Contractor shall arrange and attend weekly maintenance of traffic coordination meetings with representatives of all adjoining contracts.

Traffic staging, lane closures, the placement and removal of signs, pavement striping, or the placement and removal of other traffic control devices within the limits of the Contract may require coordination with other Contracts in adjacent sections. The provisions of Article 105.08 of the Standard Specifications will apply at those locations. Should a conflict arise between Contracts with respect to sequence of construction or maintenance of traffic requirements, said conflicts shall be resolved by, or at the direction of the Engineer.

During initial traffic staging and all intermediate traffic phase changes, the Contractor shall provide direct radio contact between the Engineer and all of his traffic control vehicles and personnel.

- (b) Lanes and Ramps. The Contractor shall schedule his construction operations so as to maintain the minimum number of lanes as shown in the Maintenance of Traffic Plans exclusive of acceleration lanes, deceleration lanes, or weaving lanes, in both mainline directions, subject to the conditions specified for each construction stage. Construction scheduling shall also be such as to maintain a single lane of traffic on all ramps.

The Contractor shall be required to maintain the ramp acceleration and deceleration taper lengths shown in the Plans as a minimum. The Contractor shall be permitted to use shorter lengths for a maximum of three 3 continuous hours with prior written approval of the Engineer.

(c) Construction Delays. The Contractor will be expected to prosecute the work without undue delays or extended time intervals between activities, whenever lane closures are in effect. If, in the judgment of the Engineer, the lack of Contractor's activities is, or is expected to be of an unacceptably lengthy duration, the Contractor, when so instructed by the Engineer, shall remove all lane closures until such time as the Contractor is ready to resume his activities.

(d) Responsibility for Traffic Movement. The Contractor shall be solely responsible for maintenance of traffic on the Tollway within the limits of the Contract during the term of the Contract. The Contractor may submit his own maintenance of traffic plan, but will not be permitted to change or alter the construction staging and barricade system detailed in the Plans without prior written approval of the Engineer. Ramps may not be closed to traffic without the Engineer's prior approval.

No work which will require movement of vehicles to and from work sites, or which will otherwise interfere with Tollway traffic will be permitted during the holiday periods specified in Article 701.12.

(e) Shoulders and Gores. During construction, a portion of the existing Tollway shoulders and gore areas may be used for traffic lanes. When this is necessary, shoulder repairs shall be made as required in order to bring the shoulder to a useable condition. The shoulders shall be repaired at locations noted in the Plans and/or as directed by the Engineer. This work will be measured and paid for in accordance with the provisions of Section 442. Where shown in the Plans or as directed by Engineer, gore areas shall be temporarily filled to provide a smooth riding surface for use as a traffic lane. Slotted drains shall be securely covered with 0.024" aluminum flashing, 12" wide to prevent intrusion of bituminous material into the pipe. A paper bond breaker shall be used, except at edges, to facilitate removal of such temporary fill when no longer required. This installation and the subsequent removal of such temporary fill shall be considered as included in the Contract lump sum price for Traffic Control and Protection (Special). The Contractor shall be responsible for the continuous maintenance of the shoulders and gore areas while they are utilized for traffic and make all necessary repairs as requested and directed by the Engineer. This work will be paid for according to Article 109.04. After the shoulders are no longer required for traffic lanes, the Contractor will repair shoulder areas as directed by the Engineer. This work shall be measured and paid for in accordance with the provisions of Section 442.

(f) Altered Conditions and Temporary Lane Closures. It is the intention of the Tollway to provide consistent stage changing throughout all contracts. In the event of construction changes and with the approval of the Chief Engineer, the Contractor may be allowed to proceed into subsequent stages or continue in a particular stage that may be inconsistent with the traffic flow through adjoining contracts. The implementation of any such deviations and inconsistencies shall be understood to be for the convenience of the Contractor and, unless otherwise specifically agreed in writing between the parties to the Contract, shall be undertaken without additional cost to the Department and without cause for the Contractor claiming delay.

The Contractor shall notify the Engineer two (2) weeks in advance of beginning his work, and shall obtain written approval of the Engineer of his intended work; however, the Engineer may require alteration of the intended work procedure as dictated by prevailing traffic conditions.

Temporary off-peak hour (10 p.m. to 5 a.m.), I-94 one-lane closures must be requested in writing by the Contractor through the Engineer using Tollway standard request forms eight days in advance of the requested closure. Forms must be received by 1:00 p.m. The Contractor shall provide to the Engineer a proposed master plan schedule for lane closures prior to the Notice to Proceed. On the last day of each month, the Contractor shall provide the Engineer with a listing of all anticipated closures for the following month.

- (g) Intermediate Phase Changes. The Contractor will be allowed one intermediate phase change per direction per stage, subject to the requirements herein specified. An intermediate phase change shall be defined as an interim traffic transition or jog within a stage and shall be implemented with 83:1 taper rates or as detailed on the Tollway Standard Drawing SD 05-36, transition edge lines and transition barricades on 50 foot centers. The location of the shift and the installation of proper signing shall be approved by the Engineer. If a conflict with adjoining Contracts should arise, construction staging as shown in the Plan Typical Sections shall take precedence over any intermediate phase change.
- (h) Work Zone Speed Limit Signing. Whenever workers are present and so close (12' or less) to moving traffic that an undue hazard exists, Sign Assemblies (Construction Speed Limit Sign), as detailed in the IDOT Standard Drawings, shall be placed adjacent to the open traffic lane(s) at a distance of 500 feet to a maximum of 2500 feet in advance of the workers throughout the work area. Moving operations will require continuous adjustment of the Sign Assembly location in order to maintain the above interval.

An additional Sign Assembly shall be placed 500 feet beyond the last entrance ramp for each interchange that falls within the 2500 foot interval.

The Sign Assembly shall be placed no closer than 500 feet from any other sign.

The Sign Assembly shall not be utilized when workers are behind a temporary (movable barrier) wall.

The Sign Assembly shall be promptly removed or covered when workers are not present so close to moving traffic. All conflicting speed limit signs shall be covered or removed.

Signs R2-5a, R 2-1 with G20-I102 and G20 - I103 shall be in place when the Sign Assembly (Construction Speed Limit Sign) is up. These signs shall also be removed or covered when the Sign Assembly is removed or covered, unless otherwise required by the maintenance of traffic plan.

### **701.05 Construction Sequences and Traffic Staging**

The governing factor in the execution and staging of construction is to provide the motoring public with safe possible travel conditions on both the Tollway and interchange ramps. In case of conflict in sequence of construction between Contractors, work items and/or Plans, this will be the governing consideration. The Engineer shall have sole authority in resolving such conflicts.

All construction sequences and traffic staging shall be as shown in the Maintenance of Traffic Plans and described in detail in the Special Provisions. No deviation therefrom will be permitted, except as provided in Article 701.04.

Simultaneous work activities on both side of the same direction of tollway traffic shall not be allowed. The Contractor shall be subject to a penalty under Article 701.01 (b)(1) whenever the Contractor or his/her Sub-Contractor is found to be in non-compliance.

### **701.06 Construction Traffic Management**

- (a) General Requirements. All signs, markings, barricades, warning lights, flaggers, or other devices that are used for the purpose of regulating, warning and guiding Tollway traffic shall be in accordance with the Contract Plans, Special Provisions, and the MUTCD.

All flaggers engaged in work zone traffic control operations are required to be certified by IDOT or by an agency approved by the IDOT. While on the job site, each flagger shall have in his/her possession a current driver's license and a current flagger certification I.D. meeting IDOT requirements. For non-drivers, the Illinois Identification Card issued by the Secretary of State will meet the requirement for a current driver's license. This flagger certification requirement may be waived by the Engineer for emergency situations that arise due to actions beyond the Contractor's control where flagging is needed to maintain safe traffic control on a temporary basis.

Whenever the operation of the Contractor endangers or interferes with vehicular traffic on the Tollway as determined by the Engineer, the Contractor shall place and subsequently remove all traffic control devices necessary to guide vehicular traffic and protect the motoring public at no additional cost to the Department. Sandbags which are used to secure barricades and sign stands shall be included. The Engineer shall have the right to inspect all traffic control equipment furnished by the Contractor before the start of general construction. In addition, the Contractor shall furnish additional flaggers on a continuous basis whenever any construction operations encroach on traveled lanes.

A flagger will be required 200' in advance of any work area where construction vehicles and trucks are entering or leaving the work site and at all times during which workers are present where traffic is restricted to less than the normal number of lanes on a multi-lane pavement and the workers are not separated from the traffic by physical barriers, flaggers shall be furnished at the Contractor's expense to protect the workers and to warn and direct traffic.

The flagger shall be stationed to the satisfaction of the Engineer and equipped as specified in 701.03(i). Except as otherwise shown on the plans, one flagger will be required for each separate activity of an operation that requires frequent encroachment in a lane open to traffic. "FLAGGER AHEAD" signs will be required in advance of a flagger station (500' on mainline; 200' on ramps) at all times that a flagger is used to control traffic. Such signs shall be removed or covered when the flagger is not present.

All temporary signing and marking shall be in place and approved by the Engineer prior to beginning any other work on the Contract. The Contractor shall be responsible for the proper location, installation and arrangement for all traffic control devices used for the project. The Engineer will inspect the placement of traffic control devices before work begins on each construction stage. Any deficiencies shall be corrected by the Contractor before starting work in any stage.

Whenever particular work or procedures dictate a relocation of proposed or existing traffic control devices, including barricades, signs, signals, markings, and flaggers, as determined by the Engineer, the Contractor shall remove, relocate and re-erect the identified devices. After such work or procedure has been completed, the Contractor, at the Engineer's direction, shall return and re-erect such devices in their original locations. All advance warning signs for lane closures, detour guide signs, intermediate information signs, and standard signs shall be erected at a height of 7 feet measured to the bottom of the sign, unless otherwise specified in the Plans. Signs shall be installed in a manner to resist damage or knock down in severe wind conditions and also to allow ease of relocation during stage changes.

The Contractor shall be responsible for the proper maintenance of all traffic control devices installed by him including proper location, installation, arrangement, and conditions as designated in the Contract Plans and Special Provisions, or required by the Engineer, for the duration of the Contract. The Contractor shall provide the necessary manpower, vehicles, equipment, and supplies of extra traffic control devices to adequately fulfill this responsibility. As a minimum, the Contractor shall have a Worksite Traffic Supervisor who will be responsible for initiating, installing and maintaining all traffic control devices as described in this Section and in the plans. The Worksite Traffic Supervisor shall have at least one year of experience directly related to worksite traffic control in a supervisory or responsible capacity and shall be certified by the American Traffic Safety Services Association Worksite Traffic Supervisor Certification Program or an equal approved by the Engineer. Approved alternate Worksite Traffic Supervisors may be used when necessary.

The Worksite Traffic Supervisor shall be available on a 24-hour per day basis and shall review the project on a day to day basis as well as being involved in all changes to traffic control. The Worksite Traffic Supervisor shall have access to all equipment and materials needed to maintain traffic control and handle traffic related situations. The Worksite Traffic Supervisor shall ensure that routine deficiencies are corrected within the time limit specified in Article 701.01(b)(2). This individual shall be accessible to the Engineer by a pager and cellular telephone. In addition, the

Contractor shall provide the Engineer the names and telephone numbers of two individuals who will be available 24-hours per day, 7 days per week to respond to calls from the Engineer to correct traffic control deficiencies during those periods of time when the Worksite Traffic Supervisor cannot be reached.

All barrier delineators including those mounted on guardrail, whether existing or installed under this Contract, shall be kept clean for optimal visibility. Barrier delineators shall be oriented so as to be visible to motorists in the traffic lanes.

- (b) Placement of Barricades. All barricades shall conform to the requirements of Article 701.03 (a) and shall be placed in accordance with the Maintenance of Traffic Plans and the MUTCD.

The Contractor will not be permitted to erect, change or remove any barricades or barricade systems without prior approval of the Engineer. The Contractor will be required to leave and maintain all traffic control devices in place until all construction operations have been completed in each stage shown in the Contract Plans. The Contractor shall schedule and conduct his operations so that full access is provided at all interchanges, unless otherwise directed by the Engineer. The Contractor shall arrange and manipulate barricade placement and schedule construction operations to permit continuous operation of all lanes designated as open to traffic, unless otherwise directed by the Engineer.

Minor modifications of barricade placement at entrance and exit ramps and at runarounds will be allowed; however, such modifications shall be approved by the Engineer. Barricade placement in connection with such modifications must be consistent with all advance guide or detour signs.

Placement of all barricades shall proceed in the direction of traffic flow. Removal shall proceed toward oncoming traffic. A shadow vehicle equipped with a Truck Mounted Attenuator in accordance with Article 701.03(j) will be required whenever markings are being applied or a moving lane closure is being used.

The height of the barricades shall not be less than 3 feet above pavement or shoulder elevation. Barricades that must be placed in excavated or "below-grade" areas shall be equipped with leg extensions to raise the top bar to this minimum height. The cost for furnishing leg extensions where necessary shall be considered as included in the Contract lump sum price for Maintenance of Traffic and no additional compensation will be allowed.

All barricades shall be kept clean for maximum visibility. Barricades shall be cleaned at least weekly. The Engineer shall be notified of the barricade cleaning schedule.

- (c) Placement of Cones. All traffic cones shall conform to the requirements of Article 701.03 (b). When and where allowed, the traffic cones shall be placed in accordance with the Maintenance of Traffic Plans.

Paragraphs 2, 3, and 4 of Article 701.06(b) shall also govern the placement of cones.

When dictated by wind or traffic conditions, cones shall be “doubled” or otherwise satisfactorily weighted at their bases to prevent their being blown into the path of vehicles in adjacent open lanes. Placing tires over cones for added stability will not be permitted. If the Contractor is unable to successfully prevent the migration of cones into live traffic lanes, and when so directed by the Engineer, their use shall be discontinued and weighted barricades used in their place.

- (d) Construction Traffic Signs. All signs shall conform to the requirements of Article 701.03(d) and shall be placed in accordance with the Maintenance of Traffic Plans and the MUTCD.

The Contractor shall be required to cover traffic sign legends which are inconsistent with intended traffic flow patterns. Each cover shall be a blank 1/4" plywood panel bolted to the sign face in such a manner so as to cover the inconsistent message.

All signs shall be kept clean for maximum visibility. Signs shall be cleaned at least weekly. The Engineer shall be notified of the sign cleaning schedule.

All diamond-shaped construction warning signs used on mainline, crossroads and ramps shall be fluorescent orange in color.

- (e) Warning Lights. All warning lights shall conform to the requirements of Article 701.03 (e). Barricades and signs will be equipped with warning lights as required by the Maintenance of Traffic Plans and the MUTCD.

All lights shall be kept clean for maximum visibility. Lights shall be cleaned at least weekly. The Engineer shall be notified of the light cleaning schedule.

**701.07 Maintenance of Traffic on Crossroads.** Maintenance of traffic and lane closures on crossroads shall be in accordance with the latest edition of the MUTCD.

Prior to commencing any work on, adjacent to, or over any crossing roadway, the Contractor shall contact the appropriate agency and shall secure all required permits, as determined by such agency. The Contractor shall supply the Engineer with copies of all permits. Costs incurred in connection therewith will not be paid for separately, but will be considered as included in the Contract lump sum price for Traffic Control and Protection (Special).

When a lane closure is necessary, the Contractor shall notify the agency having jurisdiction at least 48 hours in advance. The Contractor shall furnish, erect and maintain all barricades, cones, temporary pavement markings, traffic control signs and all other fixtures and devices which may be required for the safe movement of traffic on the crossroads.

**701.08 Contractor Vehicular and Pedestrian Movements.** Except as provided in Article 701.06 (b), the Contractor’s vehicles shall move with and not across or against the flow of traffic. These vehicles will not be permitted to make U-turns or cross the median at any location and all vehicles will be required to use local exits and local streets to reverse direction except

when both median lanes are closed to traffic. U-turns will be permitted at the existing crossovers shown in the Contract Plans only with the prior approval of the Engineer and subject to the conditions or constraints concomitant to such approval.

Vehicles shall enter or leave work areas in a manner which will not be hazardous to, or interfere with, normal Tollway traffic. Vehicles shall not park or stop except within designated work areas.

Parking of personal vehicles within the right-of-way will not be permitted except when specific areas are designated by the Engineer. The Contractor's personnel will be prohibited from crossing operational lanes on foot. All pedestrian movement on the Tollway will be limited to within barricaded work areas. Failure by the Contractor's personnel to comply with these requirements will be considered non-compliance with the Maintenance of Traffic Specifications and shall render the Contractor subject to the applicable penalty cited in Article 701.01 (b).

**701.09 Temporary Concrete Barrier.** When the Contractor is required to pick-up or deliver precast concrete barrier sections from or to the Tollway's storage facilities, the Contractor will be required to install and maintain lane and/or shoulder closures and advance warning signs, and to furnish flaggers for the safe ingress and egress of vehicles transporting the barrier sections at both the storage site and the construction site. Furnishing such traffic control devices together with their removal, and furnishing flaggers in connection therewith shall be considered as included in the Contract unit price for Temporary Concrete Barrier as provided in Section 704.

The Contractor shall have and maintain appropriate equipment to be able to adjust and/or relocate temporary barrier sections in an emergency situation as provided in Section 704.

In the event any temporary concrete barrier sections are damaged, dislodged, and/or misaligned by traffic or by the Contractor's operations, the Contractor's forces shall begin the necessary operations for replacement and/or realignment of such sections within 30 minutes after notification by the Engineer, at no additional cost to the Department. Failure by the Contractor to comply with this requirement will be grounds for assessment of maintenance of traffic fine in accordance with the provisions of Article 701.01 (b)(2).

**701.10 Bridge Repair Operations.** During bridge repair operations, any work to be done over operational traffic lanes shall be done over only one lane at a time, with that lane being closed to traffic.

The Contractor will be required to coordinate such repair operations with the construction staging shown in the Maintenance of Traffic Plans.

Impact Attenuators, Temporary shall be in place prior to placing Temporary Concrete Barrier sections for bridge construction as shown in the Plans. Temporary Concrete Barrier sections must be in place prior to parapet removal and may not be removed until all bridge widening and other repair work is complete. When removal is permitted, the Temporary Concrete Barrier sections shall be completely removed prior to removal of the Impact Attenuators, Temporary.

When any bridge repair or construction operation or feature is likely to cause the vertical clearance over any operational traffic lane(s) to be reduced, the Contractor shall contact both the Engineer and the Tollway not less than 10 working days prior to the start of such construction for permission and instructions with respect to signing and Maintenance of Traffic requirements. The cost therefore shall be considered as included in the Contract lump sum price for Traffic Control and Protection (Special).

**701.11 Bridge Painting Operations.** Any bridge painting to be done over operational traffic lanes shall be done one lane at a time, with that lane being closed to traffic in accordance with the procedures specified herein as may be modified by the Special Provisions.

The Contractor will be required to coordinate such painting operations with the construction staging shown in the Maintenance of Traffic Plans.

**701.12 Holiday Periods.** No work which will require movement of vehicles to and from the work site or which will otherwise interfere with Tollway traffic will be allowed during the following holiday periods without specific written authorization from the Tollway:

- Easter Weekend - 12:00 Noon Thursday through 9:00 A.M. Monday
- Memorial Day Weekend - 12:00 Noon Friday through 9:00 A.M. Tuesday
- Independence Day - as specified in the Special Provisions
- Labor Day Weekend - 12:00 Noon Friday through 9:00 A.M. Tuesday
- Thanksgiving Weekend - 12:00 Noon Wednesday through 9:00 A.M. Monday
- Christmas-New Year's Day period - as specified in the Special Provisions

**701.13 Storage of Equipment and Materials.** During working hours, all vehicles and/or non-operating equipment and material stockpiles which are parked or stored for 2 hours or less shall be located at least 8 feet from the edge of the nearest moving traffic lane.

During non-working hours, or during working hours for periods of more than 2 hours, all vehicles and/or non-operating equipment and material stockpiles shall be parked or stored a minimum of 30 feet from the edge of the nearest traffic lane or shall be located behind man-made or natural barriers which in the opinion of the Engineer serve to fully protect the storage area and not constitute a hazard to motorists. Temporary concrete barrier sections which are installed in conjunction with lane closures or as protection for work areas will be considered an acceptable means of protection of storage areas, subject to approval of the Engineer.

When adequate right-of-way does not exist to accommodate this requirement, and when in the opinion of the Engineer no practical alternative exists, the storage area may be located a minimum of 15 feet from the edge of the nearest traffic lane and shall be delineated with barricades and flashing lights at no additional cost to the Department. The Contractor shall protect the stored materials from errant vehicles with an approved means of protection also at no additional cost to the Department.

With the exception of the special condition with respect to 2 hour periods, no parked Contractor vehicles, non-operating equipment, or material stockpiles will be allowed to remain closer than 15 feet to any operational traffic lane under any circumstances. Failure by the

Contractor to comply with these requirements will be considered non-compliance with the Maintenance of Traffic Specifications and shall render the Contractor subject to the applicable penalty cited in Article 701.01 (b)

**701.14 Work Above Active Roadways.** Procedures to enable erection of any items of work above roadways with vehicular and/or pedestrian traffic shall be subject to the provisions of Articles 733.05 (b) of the Tollway Supplemental Specifications. The Contractor shall submit to the Engineer the erection and maintenance of traffic methods he proposes to use.

Along with erection drawings, the Contractor shall submit for the Engineer's and Tollway's approval a detailed traffic control plan for the erection period identifying the number of lanes involved, the type of erection equipment used, etc. The following minimum requirements shall be complied with by the Contractor.

- Any erection of beams/girders over a Tollway road shall require a complete closure to traffic, regardless of location or time of day.
- The Contractor shall erect beams/girders only between the hours of 12:01 A.M. and 5:00 A.M. Monday through Sunday. Forty-eight (48) hours advance written notice to the Tollway, together with the Engineer's written approval, will be required prior to erection of any beam/girder.
- The maximum allowable time limit for a full closure on a Tollway road shall be fifteen (15) minutes, ten (10) for sign truss erection.
- The Contractor shall not reopen lanes below newly erected members until the members are securely in place. In the event the full-width tollway closure exceeds the allowable time period, the Contractor will be subject to a penalty cited in Article 701.01(b)(1) per minute for any part of a minute exceeding the allowable time.

#### **Method of Measurement and Basis of Payment.**

Delete all paragraphs. Add the following paragraphs:

The traffic control and protection required under this special provision will not be measured for payment.

All cost incurred by maintenance of traffic within the limits as shown on the contract plans, unless noted and paid for elsewhere, are included in the contract LUMP SUM bid price for TRAFFIC CONTROL AND PROTECTION (SPECIAL).

#### **Earth Excavation (Special)**

This work shall consist of the excavation of bench cuts within the existing embankment as detailed and shown in the plans or directed by the Engineer. The bench cuts into the existing embankment shall not exceed two (2) feet in depth. This work shall be according to Section 202 of the Standard Specifications.

This work will be measured and for payment according Article 202.07 of the Standard Specifications.

This work will be paid for at the contract unit price per cubic yard for EARTH EXCAVATION (SPECIAL).

### **Rock Excavation for Structures (Special)**

This work consists of excavation of rock, unsuitable material, or any other obstructions encountered in the trench during construction of the storm sewers or culverts. This work shall be done in accordance with the applicable portions of Sections 502, 542 and 550 of the Standard Specifications.

The area to be used for calculating the quantity of excavation, special shall be the entire area calculated using the outside diameter of the sewer pipe until the above material is not encountered or as determined by the Engineer.

This work will be paid for at the contract unit price per cubic meter (cubic yard) for ROCK EXCAVATION FOR STRUCTURES (SPECIAL) measured as specified.

### **Braced Excavation**

Description. This work shall consist of furnishing all labor, equipment, and materials necessary to install, maintain and remove a braced excavation support system to protect the adjacent roadway during the construction of the storm sewers or culvert pipes and manholes that are greater than 20 feet deep and as specified herein.

General Requirements. The design of the braced excavation is the responsibility of the Contractor. The Contractor shall submit drawings and design for the braced excavation to the Engineer for approval. The braced excavation design and drawings shall be signed and sealed by an Illinois licensed Structural Engineer, submitted and approved prior to the start of any work. The Engineer's approval shall not relieve the Contractor from the sole responsibility of the structural integrity of the braced excavation system.

The braced excavation shall be capable of restraining earth pressures resulting from the surcharges imposed by construction equipment, trucks and vehicular traffic on the adjacent roadway. The braced excavation shall include all sheeting, walers, struts, and bracing, hardware and all appurtenant and collateral materials and work required to protect the adjacent roadway where the braced excavation is utilized.

It shall be the Contractor's responsibility to verify all existing conditions, including utilities, and access to the site prior to construction or ordering of materials. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractors operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department.

All materials, equipment and construction methods shall be in accordance with the requirements of Sections 502, 505 and 512 of the Standard Specifications except as herein modified.

At the option of the Contractor, the materials may be new or used. If used, the materials shall be in good condition and acceptable to the Engineer. The Contractor shall provide all temporary or permanent materials required for the proper execution of the work on this Item.

For trench width, the maximum width of excavation is the width of the outside diameter of the sewer plus the appropriate width required for trench backfill material plus 2' on either side for installation of support system. The maximum width of excavation for the manholes is the outside diameter of the manhole shaft plus 4 feet. Excavation outside the maximum dimensions specified will not be measured for payment.

Method of Measurement. This work will be measured for payment as a computed volume in cubic yards as described in Sections 502, 542 and 550 of the Standard Specifications.

Basis of Payment. This work will be paid for at the Contract unit price per cubic yard for BRACED EXCAVATION. The price shall be payment in full for all work, equipment, and materials necessary for excavating, installing, maintaining, and removing the braced excavation support system as specified herein.

## **Sleeper Slab**

### Description:

This work consists of constructing a sleeper slab (reinforced concrete grade beam) at the locations shown on the plans or as directed by the Engineer. This work shall be performed in accordance with the applicable portions of Section 420 of the Standard Specifications, the details in the plans and as herein specified.

### Materials:

Concrete shall be Class SI meeting the requirements of Section 1020.

Reinforcement bars shall be Grade 60 meeting the requirements of Section 1006.10.

### Method of Measurement:

Sleeper slab will be measured for payment in place, and the area computed in square yards.

Reinforcement bars, polyethylene bond breaker and preformed joint filler shall not be paid for separately, but shall be included in the unit price for the sleeper slab. Excavation, except excavation in rock, shall be paid as Earth Excavation.

### Basis of Payment:

This work will be paid for at the contract unit price per square yard for SLEEPER SLAB, which price shall be payment in full for all materials, labor, tools, equipment and incidentals necessary to complete the work as specified.

## **Temporary Pavement**

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

For temporary pavement under IDOT jurisdiction, the Contractor shall have the option of using either 8" Portland Cement Concrete Base Course as outlined in Section 353 of the Standard Specifications or 2" Hot-Mix Asphalt Surface Course, Mix D, N70 with 8" Hot-Mix Asphalt Base Course. Materials shall be constructed in accordance with Sections 355 and 406 of the Standard Specifications.

For temporary pavement under ISTHA jurisdiction, the Contractor shall use 6" HMA Pavement (2" Hot-Mix Asphalt Surface Course, Mix D, N70 with 4" Hot-Mix Asphalt Base Course) for pavement to remain less than 6 months, or 9" HMA Pavement (2" Hot-Mix Asphalt Surface Course, Mix D, N70 with 7" Hot-Mix Asphalt Base Course) for pavement to remain longer than 6 months but less than two years. All materials shall be constructed in accordance with Sections 355 and 406 of the Standard Specifications.

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

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

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

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

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

## **High Early Strength Portland Cement Concrete Pavement, 10-inch (Special)**

Description: This work shall consist of placing High Early Strength Portland Cement Concrete pavement in areas of time restricted lane and ramp closures. Closures are generally expected to be allowed on advance scheduled weekends from 9PM on Friday to 5AM Monday. At least 10 days advanced notice must be provided to the Engineer and the Tollway, along with a formal Tollway lane closure request.

This work shall be performed in accordance with Section 420 of the Standard Specifications except as herein modified:

Materials: Concrete pavement shall use one of the following mixtures:

Class PP-3 concrete shall be used for all work placed prior to 1PM on Sunday.

Class PP-5 concrete shall be used for all work placed between 1PM Sunday and 11PM Sunday.

Add the following Article 1020.13 of the Standard Specifications to read:

When the air temperature is less than 13 °C (55 °F), the Contractor shall cover the pavement with minimum R12 insulation until opening strength is reached. Insulation is optional when the air temperature is 13 °C – 35 °C (55 °F – 96 °F). Insulation shall not be placed when the air temperature is greater than 35 °C (96 °F)."

Revise the second paragraph of Article 701.05(e)(1)d.1. of the Standard Specifications to read:

"No open holes, broken pavement, or partially filled holes shall remain past the closure period when the Department specifies only PP-3 or PP-5 concrete be used. The only exception is conditions beyond the control of the Contractor. Any pavement started but not completed by the hours specified in the Special Provision or by permit shall be temporarily filled with binder course (Superpave Bituminous Concrete Binder Course, IL-19 mm, N70, AC Type PG 64-22, 15% RAP maximum, Air Voids 4% @ 70 Gyration). These temporary patches shall be removed and the concrete pavement completed on a later weekend closure. Installation and removal of the temporary patches will not be paid for separately, but the costs shall be considered as included in the cost of the High Early Strength Portland Cement Concrete Pavement involved and no additional compensation will be allowed."

Revise Article 701.05(e)(2)b. of the Standard Specifications to read:

"b. Strength Tests. The pavement may be opened to traffic when test specimens cured with the patches have obtained a minimum flexural strength of 4150 kPa (600 psi) or a minimum compressive strength of 22,100 kPa (3200 psi) according to Article 1020.09.

For PP-5 concrete, the strength shall be determined by flexural method only

With the approval of the Engineer, concrete strength may be determined according to AASHTO T 276. The strength-maturity relationship shall be developed from concrete which has an air content near the upper specification limit. The strength-maturity relationship shall be re-established if the mix design or materials are changed."

Revise Article 701.05(e)(2)c. of the Standard Specifications to read:

"c. Construction Operations. Contractor construction operations shall be performed in a manner which allows the pavement to be opened by the hours specified in the Special Provision. If the pavement is not opened by the hours specified in the Special Provision the additional traffic control shall be at the Contractor's expense. Any time pavement cannot be opened by the hours specified in the Special Provision, the Contractor shall change subsequent construction operations or the mix design. The changes shall be at no additional cost to the Department."

Revise Table 1 of Article 1020.04 of the Standard Specifications by replacing Class PP concrete with the following:

TABLE 1. CLASSES OF PORTLAND CEMENT CONCRETE AND MIX DESIGN CRITERIA				
Class of Concrete	Use	Specification Section Reference	Cement Factor kg/cu m (cwt/cu yd)	Max. Water/Cement Ratio
PP-3	PCC Pavement	442	Type III Cement 435 (7.35)	0.35
PP-5	PCC Pavement	442	Calcium Aluminate Cement 400 (6.75)	0.40

For PP-3, in addition to the cement, 60 kg/cu m (100 lb/cu yd) of ground granulated blast furnace slag and 30 kg/cu m (50 lb/cu yd) of microsilica are required. For an air temperature greater than 30 °C (85 °F), the Contractor has the option to replace the Type III cement with Type I cement.

For PP-5, the cement shall meet the standard physical requirements for Type I cement according to ASTM C 150, except the time of setting shall not apply. The cement shall have the following chemical composition:

- a. Aluminum Trioxide, minimum 38%
- b. Calcium Oxide, maximum 42%.

A non-chloride accelerator, high range water reducing admixture and air entraining admixture shall be used. The accelerator and high range water reducer shall be per the cement supplier manufacturers recommendation and dosage. The approved list of concrete admixtures shall not apply; a mobile portland cement concrete plant shall be used to produce the patching mixture.

TABLE 1. (CONT'D) CLASSES OF PORTLAND CEMENT CONCRETE AND MIX DESIGN CRITERIA					
Class of Concrete	Slump, mm (in.)	Mix Design Compressive Strength, kPa (psi)	Mix Design Flexural Strength, kPa (psi)	Air Content %	Coarse Aggregate Gradations Permitted
		Hours	Hours		
		Strength	Strength		
PP-3	150 (6) max	16	16	4.0-6.0	CA-7, CA-11. CA-13, CA-14, or CA-16
		22,100 (3200)	4150 (600)		
PP-5	200 (8) Max	NA	4	4.0-6.0	CA-7, CA-11. CA-13, CA-14, or CA-16
			4150 (600)		

Delete Article 1020.05(g) of the Standard Specifications.

Basis of Payment: This work shall be paid for at the contract unit price, per square yard, for HIGH EARLY STRENGTH PORTLAND CEMENT CONCRETE PAVEMENT, 10-INCH, (SPECIAL).

**Manhole, Type A, 8-foot Diameter, Type 1 Frame, Closed Lid**

This work shall be performed in accordance with Section 602 of the Standard Specifications except as herein modified.

Prior to manufacture of the item, the Contractor shall provide shop drawings for approval showing the dimensions and details.

**Manhole, Type A, 6-foot Diameter, with 2 Type 1 Frames, Closed Lids, Restrictor Plate**

This work shall be performed in accordance with Section 602 of the Standard Specifications except as herein modified.

This manhole shall include installation of restrictor plates of the size and type as shown on the District details as well as any appurtenant items shown on the plans.

Steel Plate, Angles and Fasteners: This work shall be constructed in accordance with applicable sections of Section 505 of the Standard Specifications for Road and Bridge Construction, as per the details as shown on the Plans and as directed by the Engineer.

Prior to manufacture of the item, the Contractor shall provide shop drawings for approval showing the dimensions and details required to locate and install the assembly.

Steel angles, plate material and all fasteners shall be galvanized.

### **Approach Slab Removal**

Description: This work shall consist of furnishing all labor, materials, and equipment necessary for the removal of the existing reinforced concrete bridge approach slabs, transverse reinforced concrete base pad and any sidewalks and medians superimposed on the approach slab at the locations shown on the plans and/or directed by the Engineer. This work shall be done in accordance with applicable portions of Section 440 of the Standard Specifications or as otherwise directed by the Engineer.

The existing bridge approach pavement slabs are approximately 20 feet in length from back of existing bridge abutments and span the full width of the existing roadway and shoulders. The approach slabs consists of reinforced concrete pavement approximately 13 inches thick. At the end of the approach slab, opposite the abutment, the slab rests on a transverse reinforced concrete base pad of approximate dimensions of 5 feet wide by 10 inches thick.

It shall be the responsibility of the Contractor to determine the thickness of the existing pavement structure, including overlays, and any appurtenances to be removed, and the extent to which they are reinforced. No additional compensation shall be allowed because of variations from assumed thickness or quantity of reinforcement.

The approach slabs and transverse concrete base pad shall be removed in their entirety. Voids resulting from these removals shall be backfilled with compacted Subbase Granular Material, Type A to the proposed subgrade elevations.

Method of Measurement: APPROACH SLAB REMOVAL will be measured for payment in place and the area computed in square yards.

Basis of Payment: This work will be paid at the contract unit price per square yard for APPROACH SLAB REMOVAL measured in place, which price shall be considered payment in full for all labor, equipment, materials, removal and disposal, including any backfill as specified.

### **Bridge Approach Pavement (Special)**

Description: This work shall consist of the construction of Portland cement concrete bridge approach pavement to the length and width as indicated on the plans along with sidewalks, concrete median and parapets supported by approach pavement at locations as shown on the plans, in accordance with applicable portions of Section 420 of the Standard Specification, and as directed by the Engineer.

Also included will be the furnishing and placement of Type A aggregate base course as shown on the plans, in accordance with applicable portions of Section 351 of the Standard Specifications, and as directed by the Engineer.

Method of Measurement: BRIDGE APPROACH PAVEMENT (SPECIAL) will be measured for payment in place and the area computed in square yards. The length will be measured along the centerline of structure. The width will be as shown on the plans.

Basis of Payment: This work will be paid at the contract unit price per square yard for BRIDGE APPROACH PAVEMENT (SPECIAL).

The unit price for BRIDGE APPROACH PAVEMENT (SPECIAL) shall include tie bars, preformed joint seal, polyethylene bond breaker, granular sub-base, reinforcement bars, the concrete pad (including reinforcement and excavation), and all other items necessary to complete this item of work.

### **Chain Link Fence Removal**

Description:

This work consists of the removal and satisfactory disposal of existing chain link fence at the locations shown on the plans or as directed by the Engineer. This work shall be performed in accordance with the applicable portions of Section 201 of the Standard Specifications and as herein specified.

General:

Removal shall include posts, fence fabric, fittings, appurtenances, attachments and concrete foundation. Any holes created by removal of the foundation shall be filled with clean earth fill to eliminate any hazard to the public.

Any signs mounted on the fence shall be removed, stored and re-erected in accordance with Article 107.25.

Disposal of removed materials shall be in accordance with Article 202.03.

Method of Measurement:

Chain link fence removal shall be measured in linear feet along the top of the fence.

Basis of Payment:

This work will be paid for at the contract unit price per foot for CHAIN LINK FENCE REMOVAL, which price shall be payment in full for all labor, tools, equipment and materials necessary to remove and dispose of existing chain link fence and restore the site as herein specified.

### **Wick Drains**

Description. This work shall consist of all labor, materials, equipment and services necessary to complete the wick drain installation according to the details and dimensions shown on the plans, this specification, and as directed by the Engineer.

Submittals.

- (a) Within two weeks of the preconstruction meeting, the Contractor shall submit to the Engineer for review:
  - (1) Details of the equipment, sequence and method of installation
  - (2) Wick drain samples indicating the source of the proposed materials
  - (3) List of at least three projects of similar magnitude and installation where the same wick drain has been installed including details on prior performance on these projects.
  - (4) Manufacturer's literature documenting the physical and mechanical properties of the wick drain. Letter of certification from manufacturer documenting test results indicating that materials meet material specifications in accordance with this specification.
- (b) Four weeks prior to installation, the Contractor shall submit to the Engineer for review, wick drain detailed drawings. The detailed plan drawing shall indicate wick drain layout and spacing; each vertical wick drain location tied to roadway baseline and wick drain limits shown on the plans; each horizontal wick drain location and limits and location of outlet; and top and bottom elevation of each wick drain.
- (c) Two weeks prior to installation, the Contractor shall submit to the Engineer purchase certificate which documents the type and physical characteristics of the wick drain to be used and documents that the materials meet testing requirements specified.
- (d) At the end of each working day, the Contractor shall supply to the Engineer, a summary of the wick drains installed that day. The summary shall include drain type, locations and length (to nearest 4 inches) quantity of wick drain installed at each location.

Quality Assurance:

- (a) Prior to the installation of wick drains within the designated areas, the Contractor shall demonstrate that his equipment, method and materials produce a satisfactory installation in accordance with these specifications. For this purpose, the Contractor shall install six trial wick drains totaling approximately 200 linear feet at locations designated by the Engineer. Payment will be made at the bid price per linear foot for wick drains. Payment will not be made for installing unsatisfactory trial wicks.
- (b) Approval by the Engineer of the method and equipment to install the trial wicks shall not necessarily constitute, acceptance of the method for the remainder of the project. If, at anytime, the Engineer considers that the method of installation does not produce a satisfactory wick, the Contractor shall alter his method and/or equipment as necessary to comply with these specifications.
- (c) The Contractor shall provide the Engineer with suitable means of making a linear determination of the quantity of wick material used in each wick location. During installation of the wick, the Contractor shall provide suitable means of determining the depth of the wick drains at any given time.
- (d) Wick drain materials shall be labeled or tagged in such a manner that the information for sample identification and other quality control purposes can be read from the label. As a minimum, each roll shall be identified by the manufacturer as to lot or control numbers, individual roll number, date of manufacture, manufacturer and product identification of the jacket and core.

Materials: The materials used for the construction of wick drains shall satisfy the following requirements:

- (a) Wick drains shall be of newly-manufactured materials and shall consist of a core enclosed in or integrated with a jacket. The jacket shall allow free passage of pore water to the core without loss of soil material or piping. The core shall provide continuous vertical drainage.
- (b) The wick drains shall be a prefabricated band-shaped drain with an aspect ratio (width divided by thickness) not exceeding 50.
- (c) Jacket material:
  - (1) Shall be a synthetic non-woven geotextile capable of resisting all bending, punching and tensile forces imposed during installation and during the design life of the wick drain.
  - (2) Shall not be subject to localized damage (e.g., punching through the filter by sand/gravel particles).
  - (3) Shall be sufficiently rigid to withstand lateral earth pressures due to embedment and surcharge so that the vertical flow capacity through the core will not be adversely affected.
  - (4) Shall be sufficiently flexible to bend smoothly during installation and induced consolidation settlement without damage.
  - (5) Shall not undergo cracking and peeling during installation of the wick drain.
  - (6) Shall conform to the following specifications:

Test Property	Test Method	(Minimum Value)*
Grab Tensile Strength	ASTM D4632	80 lbs.
Trapezoidal Tear	ASTM D4533	25 lbs.
Puncture Strength	ASTM D4833	50 lbs.
Mullen Burst Strength	ASTM D3786	130 psi

\* The jacket material shall be tested in saturated and dry condition. These requirements apply to the lower of the two tested conditions.

These criteria must be demonstrated by manufacturer's test results and letter of certification.

- (d) The core shall be a continuous plastic material fabricated to promote drainage along the axis of the vertical wick drain.

Assembly:

- (a) The mechanical properties (strength and modulus) of the assembled wick drain shall equal or exceed those specified for the component jacket and core.
- (b) The assembled wick drain shall be resistant against wet rot, mildew, bacterial action, insects, salts in solution in the groundwater, acids, alkalis, solvents, and any other significant ingredients in the site groundwater.

- (c) One single type of assembled wick drain shall be used on the project unless otherwise directed by the Engineer.
- (d) The assembled wick drain shall have a minimum equivalent diameter of 2.1 inches using the following definition of equivalent diameter:
- $$d_w = (a+b)/2$$
- $d_w$  = diameter of a circular drain equivalent to the band shaped drain  
a = width of a band shaped drain  
b = thickness of a band shaped drain

Protection of Materials. During shipment and storage, the wick drain shall be wrapped in heavy paper, burlap or similar heavy duty protective covering. The wick drain shall be protected from sunlight, mud, dirt, dust, debris and other detrimental substances during shipping and on-site storage.

Construction. Wick drains shall be installed with approved modern equipment, which will cause a minimum of disturbance of the subsoil during the installation operation. The wick installation rig shall utilize either vibratory methods or a static push. Installation shall be in accordance with the following procedure.

- (a) The drainage wick shall be installed using a mandrel or sleeve that is continuously vibrated or statically pushed into the soil. The sleeve shall protect the wick material from tears, cuts, and abrasion during installation, and shall be retracted after each drainage wick is installed. The sleeve shall be rhombic or rectangular in shape, and of cross sectional area not to exceed 10 square inches. To minimize disturbance to the subsoil, the sleeve shall not be advanced into the subsoil using impact methods. In no case will alternate raising or lowering of the mandrel during advancement be permitted. Raising of the mandrel will only be permitted after completion of a wick drain installation.
- (b) Wick drains shall be staked out by the Contractor. The locations of the wick drains shall not vary by more than 6 inches from the locations indicated on the drawings, as specified, or as directed by the Engineer. The equipment must be carefully checked for plumbness prior to advancing each wick, and must not deviate more than one inch per five feet from the vertical. Wick drains that are out of their proper location by more than 6 inches or wick drains that are damaged in construction, or wick drains that are improperly completed will be abandoned in place and no compensation will be allowed for any material furnished or for work performed on such wicks.
- (c) Wick drains shall completely penetrate the compressible soft to stiff clay strata at the site.
- (d) The Engineer may vary the depths, spacing, or the number of wick drains to be installed, and may revise the plan limits for this work, as necessary.
- (e) Splices or connections of wick drain material shall be done by stapling in a workmanlike manner and so as to insure structural and hydraulic continuity of the wick drain. The jacket and core shall be overlapped a minimum of 6 inches at any splice. A maximum of one splice per drain installed will be permitted, unless otherwise directed by the Engineer.
- (f) The Contractor is permitted to use auguring or other methods to loosen stiff upper soils and/or granular fill prior to installation of the wick drains. If predrilling or other methods are used to open an installation hole, the annulus must be filled with sand after installation of the wick drains. No additional compensation will be made for auguring or loosening of soils.

- (g) Where obstructions are encountered below the working surface, which cannot easily be removed or penetrated using normal and accepted procedures, the Contractor, shall complete the wick drain from the elevation of the obstruction to the working surface and notify the Engineer in writing within four hours.
- (h) The vertical wick drain shall be wrapped around horizontal drain and stapled as specified above.

Method of Measurement. Wick drains will be measured for payment in feet in place for the full length of wick drain (vertical) complete and in place. Wick drains that are out of their proper location by more than 6 inches or wick drains that are damaged in construction, or wick drains that are improperly completed will not be measured for payment, and no compensation will be allowed for any material furnished or for work performed on such wick drains.

Basis of Payment. This work will be paid for at the contract unit price per foot for WICK DRAINS. The prices shall be full compensation for the cost of furnishing the full length of wick drain material, installing the wick drains, altering of the equipment and methods of installation in order to produce the required end result and shall also include the cost of furnishing all tools, materials, labor, equipment, services and all other costs necessary to complete the required work. No direct payment will be made for unacceptable wick drains or for any delays or expenses incurred through change necessitated by improper or unacceptable material or equipment, but the costs of such shall be included in the Unit Prices bid for this work. No additional compensation will be allowed for the cost of constructing any work platform to provide stability for the wick drain installation equipment and to allow movement of the wick drain installation equipment across the site.

**Horizontal Strip Drain**

Description. This work shall consist of all labor, materials, equipment and services necessary to complete the horizontal strip drain installation for the wick drain system according to the details and dimensions shown on the plans, this specification, and as directed by the Engineer.

Submittals The submittal requirements shall meet the requirements for WICK DRAINS.

Quality Assurance: The quality assurance requirements shall meet the requirements for WICK DRAINS.

Materials: The materials used for the construction of horizontal strip drains shall satisfy the following requirements:

The horizontal strip drains consist of a plastic core encapsulated within a geotextile filter fabric wrap. The minimum discharge capacity shall be 3849 ft<sup>3</sup>/day.

The horizontal strip drain shall conform to the following specifications:

<b>Property</b>	<b>Value</b>	<b>Test Method</b>
Compressive Strength	10,000 psf	ASTM D 1621
Thickness	1.0 inches	ASTM D 1777
Material Type	HDPE, formed dimple core	

Property	Value	Test Method
Grab Tensile Strength	90 lbs	ASTM D 4632
Grab Elongation	50%	ASTM D 4632
Puncture Strength	55 lbs	ASTM D 4833
Mullen Burst Strength	185 psi	ASTM D 3786
Permittivity	150 gpm/sf	ASTM D 4491
AOS, U.S. Std. Sieve	70	ASTM D 4751
UV Resistance @500 hrs	85%	ASTM D 4355
Fungus Resistance	No Growth	ASTM D 1612

Property	Value	Test Method
In Plane Flow, Q&518 psf Hydraulic Gradient = 1	170 gpm/ft width	ASTM D-4716

Protection of Materials. The protection of materials requirements shall meet the requirements for WICK DRAINS.

Method of Measurement. Horizontal strip drains will be measured for payment in feet in place for the full length of horizontal strip drains complete and in place. Horizontal strip drains that are damaged in construction or that are improperly completed will not be measured for payment and no compensation will be allowed for any material furnished or for work performed on such horizontal strip drains.

Basis of Payment. This work will be paid for at the contract unit price per foot for HORIZONTAL STRIP DRAINS. The price shall be full compensation for the cost of furnishing the full length of horizontal strip drain material, installing the horizontal strip drains, altering of the equipment and methods of installation in order to produce the required end result and shall also include the cost of furnishing all tools, materials, labor, equipment, services and all other costs necessary to complete the required work. No direct payment will be made for unacceptable horizontal strip drains or for any delays or expenses incurred through change necessitated by improper or unacceptable material or equipment, but the costs of such shall be included in the Unit Prices bid for this work.

### **Sediment Control, Drainage Structure Inlet Filter Cleaning**

Description:

This work shall consist of cleaning sediment out of a drainage structure inlet filter when directed by the Engineer. This cleaning work is to be periodically performed as directed by the Engineer, for the duration of the use of each drainage structure inlet filter assembly. The Engineer will be sole judge of the need for cleaning, based on the rate that debris and silt is collected at each inlet filter location.

Cleaning of the inlet filter shall consist of inspecting, cleaning (includes removal and proper disposal of debris and silt that has accumulated in the filter bag), by vactoring, removing and dumping or any other method approved by the Engineer.

Method of Measurement:

Cleaning of the drainage structure inlet filter shall be measured for payment each time that the cleaning work is performed at each of the drainage structure inlet filter locations.

Basis of Payment:

The work will be paid for at the contract unit price per each for SEDIMENT CONTROL, DRAINAGE STRUCTURE INLET FILTER CLEANING, which price shall include all costs for labor, materials, equipment, and incidentals necessary to perform the work.

**Sediment Control, Silt Fence**  
**Sediment Control, Silt Fence Maintenance**

This Special Provision revises Section 280 and Section 1080 of the Standard Specifications for Road and Bridge Construction to eliminate the use of Perimeter Erosion Barrier and create two new items, one for Sediment Control, Silt Fence, and another for Sediment Control, Silt Fence Maintenance.

280.02 Materials. Revise Article 280.02 (f) to read:

“(f) Silt Fence Article 1080.02”

1080.02 Geotextile Fabric. Add the following to Article 1080.02:

“Sediment Control, Silt Fence fabric shall conform to the specifications of AASHTO M288-00 for Temporary Silt Fence, < 50% elongation, unsupported. This fabric shall be 90 cm (36 in) in width.

Certification. The manufacturer shall furnish a certification with each shipment of silt fence material, stating the amount of product furnished, and that the material complies with these requirements.

Sediment Control, Silt Fence support posts shall be of 5x5 cm (2x2 in) nominal hardwood, a minimum of 1.2 m (48 in) long.”

280.03 Temporary Erosion Control Systems. Delete Article 280.04 (b) and replace with:

“(b) Sediment Control, Silt Fence. This silt fence shall consist of a continuous silt fence adjacent to an area of construction to intercept sheet flow of water borne silt and sediment, and prevent it from leaving the area of construction.

The silt fence shall be supported on hardwood posts spaced on a maximum of 2.4 m (8 ft) centers. The bottom of the fabric shall be installed in a backfilled and compacted

trench a minimum of 150 mm (6 in) deep and securely attached to the hardwood post by a method approved by the Engineer. The minimum height above ground for all silt fence shall be 760 mm (30 in).”

280.05 Maintenance. Add the following to Article 280.05:

“Sediment Control, Silt Fence Maintenance shall consist of maintaining silt fence that has fallen down or become ineffective as a result of natural forces. This work shall include the removal of sediment buildup from behind the silt fence when the sediment has reached a level of half the above ground height of the fence, or as directed by the Engineer.

Silt fence damaged by the Contractor’s operations or negligence shall be repaired at the Contractor’s expense, or as directed by the Engineer.”

280.06 Method of Measurement. Revise Article 280.06 (c) to read:

“(c) Sediment Control, Silt Fence. This work will be measured for payment in meters (feet) in place and removed. Silt fence designated not to be removed, by either the plans or the Engineer, will be measured for payment by this item also.

Sediment Control, Silt Fence Maintenance. This work will be measured for payment, each incident, in meters (feet) of silt fence cleaned, reerected, or otherwise maintained.”

280.07 Basis of Payment. Revise Article 280.07 (c) to read:

“(c) Sediment Control, Silt Fence. This work will be paid for at the contract unit price per meter (feet) for SEDIMENT CONTROL, SILT FENCE.

Sediment Control, Silt Fence Maintenance. This work will be paid for at the contract unit price per meter (feet) for SEDIMENT CONTROL, SILT FENCE MAINTENANCE.”

### **Concrete Median Barrier and Base Removal**

Description: This work shall consist of the removal and satisfactory disposal of existing concrete median and base and incidental reinforcing steel, anchor bolts and conduit as shown on the Plans or as directed by the Engineer.

Equipment and methods used for removing concrete median barrier and base shall be such as to prevent damage to the concrete median barrier and base remaining in place. If it is necessary to sawcut the concrete median barrier and base to prevent damage, the Contractor shall provide the equipment and perform the work at no additional cost.

All materials removed shall be considered excess and shall be legally disposed off-site by the Contractor.

Method of Measurement: Concrete Median Barrier and Base Removal shall be measured in linear feet whose length shall be the difference between the end stations as shown on the Plans or as determined by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price per linear foot for CONCRETE MEDIAN BARRIER AND BASE REMOVAL.

### **Controlled Low Strength Material (CLSM)**

This work consists of providing CLSM to fill in Abandoned Sewers & Structures at the locations shown on the plans and schedules and in accordance with Section 593 of the Standard Specifications except as herein modified.

The Contractor shall prepare and provide adequate Mix Design and submit Test results to the Engineer to demonstrate the adequacy of the proposed CLSM slurry mix to flow through the whole length of the abandoned sewers without prior hardening and settling inside the sewer thus creating voids in the abandoned sewer. The Contractor shall also clean & remove from job site and dispose off adequately any excess material left from filling abandoned sewers and drainage structures.

#### Method of Measurement

This work will be measured for payment in cubic meters (cubic yards) of CLSM.

#### Basis of Payment

This work will be paid for at the contract unit price per cubic meter (cubic yard) for Controlled Low Strength Material (CLSM), which price shall include supply, installation & removing and disposal of the excess material from the job site.

### **Gutter, Type G-2**

#### Description:

This work shall consist of the construction Portland cement concrete gutter, including inlets and outlets and driveway entrances, as shown in the plans, in accordance with Section 606 of the Standard Specifications.

#### General:

The gutter shall be in accordance with Section 606 of the Standard Specifications, and Standard B1-00 ("Curb, Curb and Gutter and Gutter Details") as shown in the plans.

The concrete shall be Class PV, conforming in all respects to the provisions of Section 1020.

#### Method of Measurement:

GUTTER, TYPE G-2 shall be measured in feet along the flow line of the gutter.

**Basis of Payment:**

This work will be paid for at the contract unit price per foot for GUTTER, TYPE G-2, which price shall be payment in full for all labor, tools, equipment and materials necessary to install the gutter.

**Concrete Median Barrier Transition, Type V-F**

**Description:** This work shall consist of the construction of the concrete median barrier transition and shall include the concrete median barrier transition base and the furnishing and installing of necessary materials in conformity with the lines, dimensions, sections and details shown on the plans and in accordance with the requirements of these special provisions.

Materials and equipment for concrete median barrier transition and base shall be in accordance with the requirements of Section 637 of the Standard Specifications.

Construction of the concrete median barrier transition to provide a smooth transition from the concrete median to the concrete pier protection barrier shall be in accordance with the applicable portions of Articles 503.06 and 503.07 of the Standard Specifications.

The surface of the concrete barrier transition shall be finished according to Article 503.15 of the Standard Specifications, except all holes and honeycombs shall be patched immediately.

A protective coat shall be applied to the top and vertical surfaces of the barrier transition. The protective coat shall be constructed according to Article 420.18.

**Method of Measurement:** Concrete Median Barrier Transition, Type V-F will be measured for payment in feet along the centerline of the transition.

**Basis of Payment:** This work will be paid for at the contract unit price per linear foot for CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-F.

**Polyurea Pavement Marking, Type 1 – Letters & Symbols**

**Description:**

This work shall consist of furnishing and applying pavement marking letters and symbols, in accordance with POLYUREA PAVEMENT MARKING (BDE).

**Method of Measurement:**

POLYUREA PAVEMENT MARKING, TYPE 1 – LETTERS & SYMBOLS shall conform to the sizes and dimensions specified in the Illinois Manual on Uniform Traffic Control Devices and Standard 780001 and will be measured based on the total areas indicated in Table 1 of Section 780 of the Standard Specifications.

**Basis of Payment:**

This work will be paid for at the contract unit price per square foot for POLYUREA PAVEMENT MARKING, TYPE 1 – LETTERS & SYMBOLS, which price shall be payment in full for all labor, tools, equipment and materials necessary to install the pavement markings.

### **Removing Precast Flared End Sections**

Description: Removal of Existing Precast Flared End Sections for existing pipe culverts shall be as per Section 501: Removal of Existing Structures of the Standard Specifications for Road and Bridge Construction, Adopted January 1,2007.

Method of Measurement: All Precast Flared End Sections that are being removed will be measured for payment by each.

Basis of Payment: This work will be paid for at the contract unit price per each for REMOVING PRECAST FLARED END SECTIONS.

### **Removing Existing Concrete End Sections**

Description: Removal of Existing Concrete End Sections for existing pipe culverts shall be as per Section 501: Removal of Existing Structures of the Standard Specifications for Road and Bridge Construction, Adopted January 1,2007.

Method of Measurement: All Existing Concrete End Sections that are being removed will be measured for payment by each.

Basis of Payment: This work will be paid for at the contract unit price per each for REMOVING EXISTING CONCRETE END SECTIONS.

### **Temporary Erosion Control (I-94)**

This Temporary Erosion Control special provision amends the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract. It shall only apply to temporary erosion control on the I-94 mainline and IL 60 entrance and exit ramps within the limits specified on the contract plans.

Delete Section 280 in its entirety and replace with the following.

**280.01 Description.** This work shall consist of the erosion and sediment aspects of the project, including but not limited to, construction, maintenance and removal of various erosion and sediment control items, implementation and management of the approved Erosion and Sediment Control Schedules and method of operation weekly co-inspections, inspection following rainfalls, pumping operations as deemed necessary by the Contractor, dewatering of basins, preparation and adherence to the Erosion and Sediment Control Schedule.

**280.02 Management of Erosion and Sediment Control.** This work shall consist of the management of erosion aspects of the project, including but not limited to, the cost of the Erosion and Sediment Control Manager, weekly co-inspections, inspection following rainfalls, pumping operations as deemed necessary by the Contractor, dewatering basins, preparation

and adherence to the Erosion and Sediment Control Schedule and maintenance not included in the various Pay Items. This work also includes repairs to installed erosion and sediment control items which were damaged by parties other than the Contractor, its subcontractors, or their agents or employees, and which the re-establishment of these items is not included elsewhere in this Section.

(a) Construction Requirement. This work is to be performed to assure compliance with the Contract plans and specifications; the latest editions of the Illinois Environmental Protection Agency "Illinois Urban Manual" and the National Pollutant Discharge Elimination System (NPDES) permit No. ILR10. The Contractor will be required to sign the NPDES permit application prior to starting work.

(b) Penalties

(1) Non-Conformance: The Contractor will be subject to a penalty of \$1000.00 or 0.05% of the awarded contract value (whichever is greatest or as determined by the Engineer), per calendar day for each incident, to be deducted from the next pay estimate due to the Contractor, for each occurrence when the Engineer determines that the Contractor is not in full compliance with these Erosion and Sediment Control Specifications, Contract Plans, or any conditions of the NPDES permit. Non-Conformance may also include any lack of repair, maintenance, implementation of erosion and/or sediment control devices, and failure to participate in jobsite inspections.

(2) Failure to Respond: The Contractor shall be required to respond within twelve (12) hours to any request from the Engineer for re-establishing compliance with these Erosion and Sediment Control Specifications. The Failure by the Contractor to respond shall be grounds for a penalty of \$1000.00 for each occurrence, to be deducted from the next pay estimate due the Contractor. 'Respond' is interpreted to mean on the job identifying the extent of repairs to be made. 'Occurrence' is interpreted to mean each consecutive 12-hour period, or fraction thereof.

(3) Failure to Respond to Regulatory Agency Requests: The Contractor shall respond within twelve (12) hours to requests from the Engineer relating to notices from regulatory agencies (e.g., U.S. Environmental Protection Agency, the Illinois Environmental Protection Agency, the local Soil and Water Conservation District, the U.S. Army Corps of Engineers) for matters relating to violation of water resource permits and associated permit conditions. Failure by the Contractor to respond shall be grounds for a penalty of \$25,000.00 for each occurrence to be deducted from the next pay estimate due to the Contractor. 'Respond' is interpreted to mean on the job identifying the extent of corrective work required. 'Occurrence' is interpreted to mean each consecutive 24-hour period, or fraction thereof, and is applicable to each permit type.

(c) Erosion and Sediment Control Manager (ESCM). When the Contract will disturb one half ( $\frac{1}{2}$ ) aggregate acre or more of land (excluding existing pavement structure), the Contractor shall assign to the project an employee to serve in the capacity of ESCM,

unless otherwise determined by the Engineer. This employee shall be thoroughly experienced in all aspects of erosion and sediment control, and construction. The ESCM shall have the primary responsibility and sufficient authority for the implementation of the approved erosion and sediment control schedules and methods of operation, including both on-site and off-site activities included in the cost of this item.

At least 10 days prior to beginning any work on this project, the name and credentials of the ESCM shall be submitted to the Engineer for approval. Any changes in the ESCM shall require a resubmission of the above. The resubmission shall be timed to ensure that an ESCM is assigned to the project at all times.

- (d) Schedule. Twenty one days after the Notice of Award, the Contractor shall submit for approval to the Engineer, an Erosion and Sediment Control Schedule. The schedule shall indicate the sequence of construction, implementation and maintenance of controls, temporary and permanent stabilization and the various stages of soil disturbance. The schedule shall include the following:
- (1) Clearing of areas necessary for installation of perimeter controls specified in the Contract Documents.
  - (2) Construction of perimeter controls specified in the Contract Documents.
  - (3) Remaining clearing.
  - (4) Roadway grading (including off-site work).
  - (5) If applicable, utility installation and whether storm drains shall be used or blocked after construction.
  - (6) Final grading, landscaping, stabilization
  - (7) Removal of perimeter controls.
- (e) Preconstruction Conference. At the preconstruction conference, the Engineer will discuss the Erosion and Sediment Control Schedule with the Contractor. Subsequently an Erosion Control field meeting will be held prior to any soil disturbance to review the Contractor's Erosion and Sediment Control Schedule.
- (f) Inspection Meetings. Erosion and Sediment Control Meetings will be initiated and conducted by the Engineer, attended by the ESCM and Toll way representatives. The meetings will be held at least five days prior to the start of work, weekly and after every ½" or more rainfall.

**280.03 Erosion and Sediment Control – Excavation.** This work shall consist of the clearing, stripping, excavation and satisfactory disposal of all material, including rock, encountered in the construction of new sediment basins, sediment traps, dewatering basins, temporary swales and temporary channel diversions in accordance with these Specifications and the storage volumes as shown on the Plans or as designated by the Engineer.

Additionally, this work includes locating, constructing and maintaining concrete truck washout areas within the Contract Limits, as well as their removal and restoration. At the time of the Preconstruction Conference, the Contractor shall submit for approval the proposed concrete truck washout locations. The locations will be reviewed and discussed at the Preconstruction Conference to reinforce to the Contractor the importance of the sites so that the runoff does not reach the storm sewer or ditch systems. The approved location(s) will be annotated on the Engineer's copy(ies) of the Sediment and Erosion Control Plan. The Contractor and all subcontractors using ready-mix concrete on the jobsite shall be required to wash their empty trucks only at the approved washout locations. Failure to do so shall result in the Contractor receiving a Non-Conformance penalty, in accordance with Article 280.02 (b) (1).

Erosion and Sediment Control-Excavation shall not include excavation of ditches parallel to the roadway through cut sections or at the toe of slopes of embankments, or ditches at the top of cuts. Excavation for all such ditches shall be included in the payment for Earth Excavation, Section 202.

Excavation shall be carried on in such a manner that existing highway facilities, utilities, railroad tracks and other non-highway facilities which are to remain in place will not be damaged.

Upon completion of use of the basins and traps they shall be backfilled as in accordance with the requirements of Section 205 - EMBANKMENT.

- (a) Clearing and Striping. Before any sediment basin or sediment trap site is excavated for embankment, all trees, shrubs, roots and topsoil shall be removed from the area within the limits of the storage site. Disposal of cleared materials shall be in accordance with Article 202.03.

Clearing and stripping and removal of topsoil at sediment basin and sediment trap sites will not be paid for separately but shall be considered as included in the payment for Erosion and Sediment Control-Excavation.

- (b) Construction Requirements. The Contractor shall notify the Engineer at least three days in advance of the start of excavating operations to permit the completion of accurate measurements for volume determinations. Any material excavated before such measurements have been taken will not be paid for.

All excavated material not used or needed for other purposes shall be disposed of as specified in Article 202.03.

**280.04 Erosion and Sediment Control – Cleanout.** This work shall consist of excavation required for the removal of accumulated sediment, vegetation and debris from traps, basins, the area adjacent to silt fences, super silt fences, rectangular inlet protection, filter fabric inlet protection, ditch checks and any other clean out excavation of accumulated sediment.

- (a) Construction Requirements. Vegetation, sediment and minor debris build-ups shall be removed and the capacity of the control devices shall be re-established at the direction of the Engineer when the capacity of the basins and traps has been

reduced by approximately 50%. Silt fences shall be inspected after every storm event. Silt build up against silt fences shall be removed when bulges develop in the fence or when silt reaches 50 percent of fence height.

Removed material shall be disposed of, on-site or off-site, in accordance with Article 202.03.

**280.05 Silt Fence.** This work shall consist of the furnishing, installation, maintenance and removal of silt fence used for the purpose of preventing or controlling the erosion and sedimentation processes encountered during construction.

The Contractor shall furnish, install, maintain and remove specified silt fence in accordance with the Contract Plans and documents.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Silt Fence Fabric.....Article 1080.02

Support Posts - Support posts shall be a minimum of 42 inches long. Support posts shall be 2" x 2" nominal hardwood, 2" Schedule 40 steel pipe or steel support posts of a standard T or U section weighing not less than 1.33 pounds per lineal foot.

- (b) Re-erect Silt Fence. This work shall consist of re-erecting silt fence which has become ineffective as a result of natural forces. Silt fence damaged by the Contractor's operations or negligence will not be re-erected under this item.
- (c) Construction Requirements. The Contractor shall exercise due care in the re-erecting of the silt fence as not to damage otherwise reusable materials. Any material damaged in re-erecting shall be replaced by the Contractor at no additional expense to the Toll way. All of the requirements for the original installation of the silt fence in accordance with Article 280.05 of these Supplemental Specifications shall be adhered to when the fence is re-erected.

**280.06 Temporary Swale.** This work shall consist of the construction and maintenance of a temporary drainage way located to intercept and divert runoff to a stabilized outlet or to intercept sediment laden water and divert it to a sediment trapping device. The temporary swale shall be stabilized through the use of erosion resistant materials such as temporary ground cover and erosion blanket, type III (TREATMENT TYPE I), CA-3 aggregate ditch lining, 3 inches thick (TREATMENT TYPE II) or class RR3 riprap, 8 inches thick (TREATMENT TYPE III).

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Coarse Aggregate, CA-3.....	Article 1004.01
Riprap, Gradation, No. RR3.....	Article 1005.01 (c)
Filter Fabric for Ditch.....	Article 1080.03
Turf Reinforcement Mat.....	BDE

(b) Construction Requirements. Locations of the swale shall be as shown on the Plans or as directed by the Engineer. The work will be performed in accordance with the applicable portions of the following Sections:

- 281 Riprap
- 283 Aggregate Ditch
- 251 Heavy Duty Erosion Control Blanket

And the following Articles of these Supplemental Specifications:

- 280.15 Temporary Stabilization with Straw Mulch
- 280.03 Erosion and Sediment Control - Excavation

**280.07 Stabilized Construction Entrance.** This work shall consist of the furnishing, installation, maintenance and removal of all stabilized construction entrances which are used to reduce or eliminate the tracking of sediment onto public right-of-ways or streets. Construction entrances shall be used in conjunction with the stabilization of construction roads and other exposed areas.

(a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

- Coarse Aggregate, CA3.....Article 1004.01
- Filter Fabric.....Article 1080.03
- Geoweb: Geoweb cellular confinement system shall be a flexible web system such as Presto Products Companies GEOWEB GW-A8-30, or an approved equal.

(b) Construction Requirements. The Contractor shall maintain continuous surveillance and shall continuously maintain, realign, or repair all stabilized construction entrances shown on the plans or directed by the Engineer that are displaced or damaged by water, traffic, Contractor operations or any other cause. This may require periodic top dressing with additional aggregate as directed by the Engineer. Aggregate used for top dressing will be measured for payment.

Topsoil shall be removed, geotextile fabric placed and the geoweb installed and staked in accordance with the manufacturer's recommendations. The cells shall be filled with aggregate base course using CA-3 and methods and equipment recommended by the manufacturer.

The final 4 inches of the entrance shall be constructed in accordance with the applicable requirements of Section 351 using CA-3. After the stabilized construction entrance is no longer required, all of the materials used in its construction shall be removed and disposed of.

**280.08 Flotation Boom.** This work shall consist of the furnishing, installation and removal of flotation booms, used for the purpose of temporarily controlling the erosion and turbidity encountered during construction in a waterway.

The Contractor shall furnish, install and remove all specified flotation booms in accordance with the Contract Plans and documents.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Flotation boom system shall be a flexible fabric silt curtain system such as Cape Canaveral Marine Services Turbidity Barrier, or approved equal.

- (b) Construction Requirements . The flotation boom shall be installed at the location(s) as shown on the Plans. The boom shall be installed in such a manner as to prevent drift shoreward or downstream. The bottom of the boom shall reach the bottom of the waterway using 1 or 2 vertical sections as required.

Anchors shall be installed per the manufacturer's recommendations on both the shore and stream side to maximize stability. Shore anchors shall consist of a post with dead man or approved equal. Stream anchors shall be of sufficient size, type and strength to stabilize the boom with the number and spacing dependant on current velocities. Anchors shall be buoyed to prevent the boom from being pulled under water

The Contractor shall be responsible for maintenance of the boom throughout construction operations.

On completion of the project, the Contractor shall remove the boom in a manner that will prevent siltation of the waterway."

**280.09 Temporary Stream Crossing.** This work shall consist of furnishing, placing and removing geotextile fabric, temporary culvert and riprap for temporary stream crossing, excavating the bottom to the required depth and the disposal of excavated materials at the locations indicated on the Plans and/or as directed by the Engineer. When the stream has base flow, this work also includes the installation of temporary corrugated metal pipe at the stream invert.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Filter Fabric.....Article 1080.03  
Riprap Gradation No. RR3.....Article 1005.01(c)  
Corrugated Steel Pipe.....Article 1006.01

- (b) Construction Requirements. The TEMPORARY STREAM CROSSING shall be excavated to the depth and template shown on the Plans for placement of the riprap. Excavated material shall be disposed of in accordance with Article 202.03.

When indicated on the Plans and documents, geotextile fabric and corrugated steel pipe shall be placed in the excavated bottom, beneath the riprap, to the lines and dimensions shown in the Plans or as directed by the Engineer.

The aggregate shall be placed to the lines and dimensions shown in the Plans. Methods and equipment used for placing the riprap shall be approved by the Engineer.

The Contractor shall construct and maintain continuous surveillance and shall continuously maintain, realign, repair or replace all TEMPORARY STREAM CROSSINGS shown on the plans as directed by the Engineer, that are displaced or damaged by wind, water, traffic, Contractor operations or any other cause. The maintenance of the TEMPORARY STREAM CROSSINGS shall be for the full length of the contract unless otherwise specified by the Engineer. This may require periodic top dressing with additional riprap.

**280.10 Super Silt Fence.** This work shall consist of the furnishing, installation and removal of super silt fence used for the prevention or control of erosion and sedimentation processes encountered during construction. This fence consists of the attachment of a geotextile to a chain link fence.

The Contractor shall furnish, install and remove all specified super silt fencing in accordance with the Contract Documents and as directed by the Engineer.

(a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Fencing .....	Article 1006.27
Silt Fence Fabric.....	Article 1080.02

(b) Fencing. The super silt fence shall be erected as near the location shown on the drawings as possible or on a line established by the Engineer. The chain link fencing shall be constructed in accordance with Section 664 except that the fabric shall be embedded as shown on the Plans and the concrete footing shall not be used. Posts shall be anchored with drive anchor assemblies meeting the approval of the Engineer. Grounding of the fence will not be required.

**280.11 Temporary Pipe Slope Drain.** This work shall consist of the furnishing and installation of pipe, anchor devices, filter fabric and flared end sections to convey surface runoff down the face of unstabilized slopes to minimize erosion on the slope face. It is always used in conjunction with earth dikes (berms) that direct the runoff to the temporary pipe slope drain flared end section.

At the end of each construction day, temporary dikes (berms) along the edges of the top of the embankment shall be constructed and each temporary pipe slope drain will be extended and the inlet reinstalled.

This work shall be installed as detailed in the Contract Documents, as per manufacturer's recommendations and as approved by the Engineer.

On completion of the project, all materials shall become the property of the Contractor and shall be removed from the right of way.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

High Density Polyethylene Pipe.....	Article 1040.04
Corrugated Steel Pipe.....	Article 1006.01
Flexible Polyethylene Tubing.....	ASTM F667
Geotextile Fabric.....	Article 1080.02
Staples.....	Article 1081.10(d)

- (b) Flared End Section. The flared end section shall be of the same material and size used for the temporary pipe slope drain.

- (c) Construction Requirements. The TEMPORARY PIPE SLOPE DRAIN may be constructed using any of the materials specified above and shall outlet into a sediment trap or basin, or a stable conveyance system that leads to a trap or basin. The TEMPORARY PIPE SLOPE DRAIN shall be securely anchored to the slope using procedures recommended by the manufacturer. All connections are to be watertight. A flared end section shall be attached to the inlet end of the pipe and shall be relocated each time the pipe is extended. The height of the earth dike at the location of the temporary pipe slope drain shall be at least 2 times the diameter of the pipe. To prevent erosion around the flared end section, geotextile fabric (Article 1080.02) will be placed under the flared end section and shall extend 5 feet in front of it and up the front face of the dike.

**280.12 Tree Protection.** Temporary fencing shall be erected and maintained around trees designated on the Plans or as directed by the Engineer. Temporary fencing so erected shall be removed when directed by the Engineer.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Support Posts.....	Article 1081.15(b)
Fence.....	Article 1081.15(d)

The temporary fence shall be similar to plastic or wood lath snow fence.

- (b) Construction Requirements. Tree protection shall be constructed in accordance with the Tollway Standard Drawings. Support post spacing shall not exceed 5 feet.

**280.13 Temporary Channel Diversion.** This work shall consist of the furnishing of the equipment, labor and materials required to install the temporary channel diversion needed to carry the existing stream flow through or around a construction site while the permanent drainage structure is being installed. The temporary channel diversion will be stabilized as shown on the drawings and will be removed/filled in an appropriate manner once the permanent drainage structure is in place and stabilized.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Geotextile Fabric.....Article 1080.02  
Riprap Gradation No. RR3..... Article 1005.01(c)

- (b) Construction Requirements. The installation of this facility shall be done in a sequence to assure protection of the water quality of existing streams. Maintenance of the silt fence and geotextile bank protection is critical. The actual location of the channel diversion will be pro-posed by the contractor and shall be approved by the Engineer. Water shall not be diverted through the diversion channel until it is adequately protected with geotextile.

**280.14 Temporary Riprap.** This work shall consist of placing a geotextile fabric and a protective coating of dumped or hand-laid stone or broken concrete riprap for rock check dams, stone outlet structure sediment traps, dewatering basins, temporary swales, diversion dikes, temporary stream crossings, temporary channel diversions, sediment basin aggregate berms and aggregate berms as shown on the Plans, and the removal of the riprap and geotextile fabric upon the completion of the need for these temporary facilities. A geotextile shall be installed under all riprap and is incidental to the work.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Filter Fabric.....Article 1080.03  
Riprap Gradation No. RR3..... Article 1005.01(c)

- (b) Construction Requirements. The use of these materials is described in the various sections which require the use of riprap.

**280.15 Temporary Stabilization with Straw Mulch.** This work shall consist of preparing seed beds, sowing temporary seed mixture; along with furnishing, transporting and placing mulch on areas that cannot, at this time, be stabilized with permanent vegetative measures. This work will involve the placing of both straw and wood fiber mulch over the temporary seeded area. At some future date this same area will be treated as needed to establish the permanent vegetative cover, including mowing, removal of temporary vegetation, disking and/or other methods required to prepare the area for permanent vegetation.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Seed for spring and summer planting shall be annual rye grass applied at a rate of 50 lbs/acre combined with white or red sweet clover applied at a rate of 15 lbs/acre.

Seed for fall planting shall be Hard Red Winter Wheat and Winter Rye (grain) mixed in equal proportions and applied at the rate of 100 lb/acre.

Fertilizer nutrients shall be applied at the rates of 25 pounds each of actual nitrogen, phosphorous and potassium per acre. Straw mulch shall be stalks of wheat, rye, oats or other approved straw that is air dried.

Grass Seeds .....	Article 1081.04
Fertilizer .....	Article 1081.08
Straw Mulch .....	Article 1081.06(a)(1)

Replace the first sentence of Article 1081.06(a)(2) with the following:

“Hydraulic mulch shall be virgin or recycled wood cellulose containing no growth or germination inhibiting factors. Hydraulic mulch containing paper fibers will not be allowed.”

(b) Construction Requirements. Within 24 hours after the seed is applied using a hydroseeder, the seeded area shall be given a covering of mulch as follows:

- (1) The mulch blower shall apply straw mulch at the rate of 4000 lbs. per acre. The mulch shall be loose enough to permit air to circulate but compact enough to reduce erosion.
- (2) The straw mulch is to be thoroughly stabilized by following the straw application immediately with an overspray application of wood fiber mulch applied as a slurry of 750 lbs of mulch and 1000 gallons of water per acre by an approved hydraulic mulch applicator. The hydraulic mulch slurry shall be agitated a minimum of 5 minutes before application and shall be agitated during application.

Following the mulching operation, foot and vehicular traffic, or the movement of equipment over the mulched area will be restricted. Any damaged areas will be repaired and replaced at the contractor’s expense.

(c) Same Day Stabilization. This work shall consist of stabilization for those areas where limited space is available for the construction of sediment traps or other sediment control measures between the roadway sideslope and the ROW line. Same-Day Stabilization shall be utilized to reduce the movement of soils once they are exposed by the Contractor’s operations. Same-Day Stabilization is to be implemented after the initial perimeter controls are in place and concurrently with the Contractor’s daily operations.

Same-Day Stabilization may consist of either temporary erosion control measures or the permanent landscaping indicated on the plan. The permanent landscaping shall be implemented as the Same-Day Stabilization whenever possible. This means that the Contractor must stage his work so that portions of the slopes and ditches can be brought to finish grade, topsoiled and landscaped prior to the end of the workday.

When permanent landscaping is not possible, due either to construction staging or specification constraints, Same-Day Stabilization shall consist of temporary erosion

control measures. The primary method of Same-Day Stabilization during grading operations shall be Article 280.15 Temporary Stabilization with Straw Mulch. Other temporary methods shall be as directed by the Engineer.

In either case, the work zone must be left in such condition that the grading areas, disturbed that day, are stabilized and measures are in place to control sediment laden water and on-site runoff.

The Contractor shall be responsible for coordinating his operations with the work of any sub-contractors, to insure that stabilization is performed the same day that the disturbance occurs. The performance of Same-Day Stabilization is also subject to the penalties for non-conformance and failure to respond as outlined in the Standard Specifications.

**280.16 Diversion Dike.** This work shall consist of the construction and maintenance of a temporary ridge of compacted soil, located to intercept and divert runoff to a stabilized outlet or to intercept sediment laden water and divert it to a sediment trapping device. The diversion dike shall be stabilized through the use of erosion resistant materials such as temporary ground cover and erosion blanket (TREATMENT TYPE I), CA-3 aggregate ditch lining, 3 inches thick (TREATMENT TYPE II) or class RR3 riprap, 8 inches thick (TREATMENT TYPE III).

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Coarse Aggregate, CA-3.....	Article 1004.01
Riprap, Gradation, No. RR3.....	Article 1005.01(c)
Filter Fabric for Ditch Lining.....	Article 1080.03
Turf Reinforcement Mat.....	BDE

- (b) Construction Requirements. Locations of the diversion dike shall be as shown on the Plans or as directed by the Engineer. The work will be performed in accordance with the applicable portions of the following sections:

281.....	Riprap
283.....	Aggregate Ditch
251.....	Heavy Duty Erosion Control Blanket

And the following Article of these Supplemental Specifications:

280.15 Temporary Stabilization with Straw Mulch

The type of stabilization to be used shall be shown on the Plans.

The embankment used to construct the dike shall be placed along an alignment that has had all trees, brush, stumps and other obstructions removed that would interfere with the proper functioning of the earth dike berm and flow channel.

The fill shall be compacted by methods and equipment approved by the Engineer.

**280.17 Dewatering Basins.** A dewatering basin shall be installed wherever the Contractor is removing and discharging water from excavated areas on the construction site and the water is not being routed through an adequately sized sediment trap or sediment basin. The purpose of the basin is to temporarily store the discharged water and to release it in a manner that causes the sediment laden water to be filtered prior to release into a natural drainageway or stabilized conveyance.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Filter Fabric.....Article 1080.03  
Riprap Gradation No. RR3.....Article 1005.01(c)

- (b) Construction Requirements. The volume required to be stored is dependent upon the pumping rate and the amount of sediment in the water. Minimum size shall be 10'x10'x3' of depth. Location of the dewatering basins shall be approved by the Engineer.

**280.18 Rectangular Inlet Protection.** This work shall consist of the furnishing, installation and removal of a frame with chain link fence supported filter fabric to protect existing and new inlets, catch basins and manholes with open lids, where shown on the Plans or as directed by the Engineer.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Fencing.....Article 1006.27  
Filter Fabric: Filter Fabric shall be permeable barrier fabric such as 130 Ex manufactured by LLINQ Industrial Fabrics Inc. Mirafi or approved equal.

- (b) Construction Requirements. The Rectangular Inlet Protection shall be constructed as shown on the Plans. At the Contractor's option, an alternate frame and fabric system may be constructed of super silt fence.

**280.19 Geotextile Fabric, Class C.** This work shall consist of the furnishing, installation and removal of geotextile fabrics used to line temporary channel diversions, and to face the temporary dam at those locations.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Geotextile Fabric.....Article 1080.02

- (b) Constructions Requirements. All surfaces to be protected shall be graded and finished so as to be stable and firm. Prepared surfaces that become crusted shall be reworked to an acceptable condition before placing the fabric. The fabric shall be installed in accordance with the manufacturer's recommendations.

Fabric shall be applied with the length of roll laid parallel to the flow of the water. Start the installation with the initial strip placed in the center of the ditch to avoid an overlap in the center of the ditch. Where more than one width is required, a multiwidth fabric is required, lap joints to be limited to one every nine feet of width.

An anchor slot shall be placed at the upslope and downslope ends of the fabric placement. At least 12 inches of the end of the fabric shall be buried vertically in a slot dug in the soil. The fabric shall be secured in the anchor slot by pins at intervals of 3 feet or less prior to burying. The soil shall be firmly tamped against the fabric in the slot.

Pins shall be 3/16" x 18" long wire with a 1-½ " washer attached and shall be driven flush with fabric surface.

Successive lengths of fabric shall be overlapped at least 3 feet, with the upstream length on top. Pin the overlap by placing 3 pins evenly spaced across the end of each of the overlapping lengths and by placing 3 pins across the width of the center of overlap area. Check slots shall be constructed by placing a tight fold at least 8 inches vertically into the soil. Check slots shall be spaced so that a check slot occurs within each 25 feet. Pin the fabric in the check slot at each edge overlap and in the center of the fabric. Beginning and terminal ends to be staked in accordance with installation manual.

Upslope edges of fabric used as a ditch lining shall terminate on horizontal shelves running parallel to the axis of the ditch for the full length of the ditch. Edges of the fabric shall be pinned at 3-foot intervals and turned down into the trench with the silt fence fabric.

The Contractor shall maintain the fabric until all work on the contract has been completed and accepted. Maintenance shall consist of the repair of areas where damaged by any cause

**280.20 Filter Fabric Inlet Protection.** This work shall consist of the furnishing, installation and removal of filter fabric inlet protection, where shown on the Plans and/or as directed by the Engineer.

(a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Inlet Basket and Fabric Insert – Device shall be a basket and fabric insert system such as Mar-Mac Construction Products Company, Inc. Catch – All Inlet Protector, or approved equal.

Fabric Insert – Device shall be a fabric insert such as Emerald Seed & Supply Stream Savers Catch Basin Insert, or approved equal

Inlet Dam – Device shall be a fabric sleeve and dam such as Dandy Products Inc. Beaver Dam, or approved equal.

- (b) Construction Requirements. The filter fabric inlet protection shall consist of one of the following: inlet basket and fabric insert, fabric insert or inlet dam.

The device shall be equipped with an overflow feature, so drainage to the inlet is not completely blocked if the device is full of silt.

**280.21 Stone Outlet Structure Sediment Trap.** This work shall consist of the furnishing of the equipment, labor and materials required to install a stone outlet structure sediment trap as shown on the plans. Also included shall be all of the work necessary to maintain the device, and to remove all materials when directed by the Engineer.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Filter Fabric Article 1080.03  
Riprap, Gradation No RR4 Article 1005.01(c)  
Coarse Aggregate, CA-3 Article 1004.01(c)

- (b) Construction Requirements. The stone outlet structure sediment trap shall be excavated to the width, length and depth shown on the Plans.

Geotextile fabric shall be placed below the riprap. Riprap, gradation No. RR3, shall be placed to the lines and grades shown on the Plans and a one-foot layer of CA-3 shall be placed against the upstream face.

On completion of the project, all materials shall become property of the Contractor, and shall be removed from the site.

The Contractor shall maintain the device until all work on the Contract has been completed and approved. Maintenance shall consist of the repair of the device where damaged by any cause.

**280.22 Sediment Basin.** This work shall consist of the furnishing of the equipment, labor and materials required to install a sediment basin with a sediment basin dewatering device or sediment basin aggregate berm as shown on the Plans. Also included shall be all of the work necessary to maintain the device and to remove all materials when directed by the Engineer.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Concrete, Class SI.....Article 1020.04  
Coarse Aggregate, CA-2 and CA-6.....Article 1004.01  
Riprap, Gradation No. RR4.....Article 1005.01(c)  
Corrugated Steel Pipe.....Article 1006.01  
Geotextile Fabric.....Article 1080.02  
Polyvinylchloride (PVC) Pipe.....Article 1040.03(a)  
Filter Fabric.....Article 1080.03

- (b) Construction Requirements. The constructed by either excavating to obtain the required volume, or by providing a compacted clay dam at the basin outlets as site conditions allow.

The sediment basin aggregate berm shall be constructed to the width, length and elevations shown on the Plans. Riprap gradation No. RR4 shall be placed a minimum of 10 feet away from the basin outlet. A one-foot layer of CA-2 coarse aggregate shall be placed against the upstream face of the berm.

On completion of the project, all materials shall become property of the Contractor and shall be removed from the site.

The Contractor shall maintain the device until all work on the Contract has been completed and approved. Maintenance shall consist of the repair of the device where damaged by any cause.

**280.23 Temporary Ditch Check Urethane Foam/Geotextile.** This work shall consist of the furnishing of the equipment, labor and materials required to install temporary ditch check urethane foam/geotextile as shown on the plans. Also included shall be all of the work necessary to maintain and remove all materials when directed by the Engineer. Materials shall remain the property of the Contractor.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

The geotextile shall have the following properties:

Grab tensile strength lbs. (min.) <sup>1</sup>	.....ASTM D 4632 100
Grab elongation @ break (%) (min.) <sup>1</sup>	.....ASTM D 4632 15
Burst strength psi (min.) <sup>2</sup>	.....ASTM D 751 200
Weight oz./sq. yd. (min.)	.....ASTM D 3776 4.0
Equivalent opening size (min.) <sup>2</sup>	600 μm (30)
(nonwoven)	
(EOS) Sieve No. (min.) <sup>2</sup>	.....Corps of Engineers 500 μm (30)
(woven)	

<sup>1</sup> For woven fabric, test results shall be referenced to orientation with warp or weave, whichever the case may be. Both woven and nonwoven fabric shall be tested wet.

<sup>2</sup> Test results may be obtained by the manufacturer's certification.

- (b) Construction Requirements. Urethane foam/geotextile ditch checks shall be triangular shaped having a minimum height of 10 inches in the center with equal sides and a 20 inch base. The triangular shaped inner material shall be a low density urethane foam. The outer cover shall be woven geotextile fabric placed around the inner material and allowed to extend beyond both sides of the triangle 3 ft. Standard lengths of each dike shall be 7 ft. Ditch checks shall be a minimum of 14 feet long.

Wire staples fabricated from No. 11 gauge wire and at least 8 inches long shall be used to attach the ditch check to the ground. A minimum of eight (8) staples per square yard shall be installed to secure the apron to the ground. The staple pattern shall be as specified by the manufacturer.

**280.24 Temporary Ditch Check Rolled Excelsior Log.** This work shall consist of the equipment, labor and materials required to install temporary ditch check rolled excelsior log as shown on the Plans and/or as directed by the Engineer. Also included shall be all of the work necessary to maintain and remove all materials when directed by the Engineer. Materials shall remain the property of the Contractor.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Rolled Excelsior Log shall consist of an outside open weave containment fabric filled curried excelsior fibers. Product shall be Curlex Sediment Log, as manufactured by American Excelsior Company, or approved equal.

- (b) Construction Requirements. Unless otherwise shown on the Plans, the rolled excelsior log ditch check shall be 20-inch in diameter. Netting at each end of the log shall be secured with metal clips or knotted ends to assure fiber containment. Standard length of each ditch check shall be 10 feet.

Stakes shall be a minimum of one inch square if wood, or minimum one inch diameter if metal. Stakes shall be 4 feet long, driven at a spacing of 2 feet on-center, 2 feet into the ground. Stakes shall be entwined with the mesh covering the roll on the downstream side, and angled with the direction of flow.

When more than one log is required to span the ditch, logs shall be butted tightly end-to-end, and tied together with nylon fasteners ('zip-strips').

**280.25 Temporary Rock Check Dam.** This work shall consist of the furnishing of the equipment, labor and materials required to install rock check dam(s), as shown on the Plans and/or as directed by the Engineer. Also included shall be all of the work necessary to maintain the device and to remove all materials when directed by the Engineer.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Filter Fabric.....Article 1080.03  
Riprap, Gradation No. RR3.....Article 1005(c)  
Coarse Aggregate, CA-3.....Article 1004.01(c)

- (b) Construction Requirements. The rock check dam shall be constructed to the width and height shown on the Plans. Geotextile fabric shall be placed below the riprap. Riprap, gradation No. RR3, shall be placed to the width of the ditch with a one-foot layer of CA-3 coarse aggregate placed against the upstream face.

On completion of the project, all materials shall become the property of the Contractor and shall be removed from the site.

The Contractor shall maintain the device until all work on the Contract has been completed and approved. Maintenance shall consist of the repair of the device where damaged by any cause.

**280.26 Culvert Inlet Protection – Fence.** This work shall consist of the furnishing of the equipment, labor, and materials required to install culvert inlet protection of fence as shown on the Plans. Also included shall be all of the work necessary to maintain the device and to remove the fence and sediment when construction is complete.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Fencing.....Article 1006.27  
Silt Fence Fabric.....Article 1080.02

- (b) Construction Requirements. The culvert inlet protection – fence shall be constructed of super silt fence in accordance with Article 280.10 of these Supplemental Specifications and the applicable Tollway Standard Drawing, except the maximum post spacing shall be 6 feet.

The Contractor shall maintain the installation until completion and final acceptance of the Contract. Maintenance shall consist of the repair of the device where damaged by any cause, including third parties. On completion of the project, all materials shall become the property of the Contractor and shall be removed from the site.

**280.27 Culvert Inlet Protection – Stone.** This work shall consist of the furnishing of the equipment, labor and materials required to install culvert inlet protection – stone as shown on the Plans and/or as directed by the Engineer. Also included shall be all of the work necessary to maintain the device and remove all materials when directed by the Engineer.

- (a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Filter Fabric.....Article 1080.03  
Riprap, Gradation No. RR4.....Article 1005.01(c)  
Coarse Aggregate, CA-2.....Article 1004.01(c)

- (b) Construction Requirements. The culvert inlet protection – stone shall be constructed to the width and height shown on the Plans. Geotextile fabric shall be placed below the riprap. Riprap, gradation No. RR4 shall be placed in accordance with applicable detail in the Tollway Standard Drawing. A one-foot layer of CA-2 coarse aggregate shall be placed against the upstream face.

The Contractor shall maintain the installation until completion and final acceptance of the Contract. Maintenance shall consist of the repair of the device where damaged by any cause, including third parties. On completion of the project, all materials shall become the property of the Contractor and shall be removed from the site.

**280.28 Creek Buffer Strip and Silt Fence.** This work shall consist of the furnishing of equipment, labor and materials required to install creek buffer strip and silt fence.

(a) Materials. All materials shall conform to the applicable requirements of Materials, Division 1000 and specific references as follows:

Articles 280.05(a) and 280.23(a) of these Supplemental Specifications shall apply.

(b) Construction Requirements. This work shall be performed in accordance with Articles 280.04 and 280.05 of these Supplemental Specifications. Preservation and/or re-establishment of the buffer zone shall be as shown on the Plans or as directed by the Engineer.

**280.29 Method of Measurement.**

MANAGEMENT OF EROSION AND SEDIMENT CONTROL will be measured for payment per calendar month or fraction thereof.

EROSION AND SEDIMENT CONTROL-EXCAVATION will be measured for payment in its original position by cross-sections taken by the Engineer with the volume in cubic yards computed by the average end area method. Distances between end areas will be measured along a base line established by the Engineer.

Where material has been excavated beyond the designated limits without authority, the materials so excavated will not be measured for payment. No measurements will be made of embankment placed to fill these excavations to final grades.

EROSION AND SEDIMENT CONTROL-CLEANOUT will be measured and the volume calculated in cubic yards.

SILT FENCE will be measured for payment in lineal feet of fence erected. Measurement will be from center to center of end posts.

RE-ERECT SILT FENCE will be measured in linear feet of silt fence erected.

TEMPORARY SWALE will be measured along the centerline in lineal feet of swale constructed regardless of width of swale specified.

STABILIZED CONSTRUCTION ENTRANCE will be measured for payment and the area calculated in square yards. Aggregate used for maintenance of the entrance will be measured in tons and paid for as AGGREGATE BASE COURSE.

TEMPORARY STREAM CROSSING will not be measured separately for payment, but will be measured as TEMPORARY RIPRAP by weight in tons, and as TEMPORARY PIPE per lineal foot. The riprap may be weighed at the place of loading in the trucks, or at such other point as the Engineer may direct.

TEMPORARY PIPE will be measured per lineal feet completed.

SUPER SILT FENCE will be measured for payment in lineal feet. Measurement will be from center to center of end posts.

TEMPORARY PIPE SLOPE DRAINS will be measured in lineal feet completed. The length measured is along the centerline of the installed pipe including the length of the inlet structure. The relocation and reinstallation of the flared end section will not be included in the measured length. All connections, anchors and geotextile materials used to install or reinstall the temporary pipe slope drains will not be measured for payment.

TREE PROTECTION will be measured in lineal feet of fencing erected.

DEWATERING BASINS will not be measured separately for payment but shall be measured as TEMPORARY RIPRAP and EROSION AND SEDIMENT CONTROL - EXCAVATION.

TEMPORARY CHANNEL DIVERSION will not be measured separately for payment, but will be measured as EROSION AND SEDIMENT CONTROL - EXCAVATION per cubic yard, TEMPORARY RIPRAP per ton, and SILT FENCE in lineal feet and GEOTEXTILE FABRIC CLASS C in square yards. Earth plugs and dams will not be measured for payment.

TEMPORARY RIPRAP will be measured by weight in tons. The Contractor shall furnish or arrange for the use of scales as specified in Article 109.01(b), and of a type approved by the Engineer, to weigh loaded trucks. The riprap may be weighed at the place of loading in the trucks, or at such other point as the Engineer may direct. GEOTEXTILE will not be measured for payment when used with temporary riprap.

TEMPORARY STABILIZATION WITH STRAW MULCH will be measured by acre. Fertilizer nutrients, seeds, seed bed preparation, seed application, straw mulch application and wood fiber mulch application will not be individually measured for payment, but will be considered as included in the Contract unit price for TEMPORARY STABILIZATION WITH STRAW MULCH.

If shown on the Plans, SAME-DAY STABILIZATION will be included in the other unit price items utilized. If not shown on the Plans, SAMEDAY STABILIZATION will be measured and calculated in square yards of area stabilized.

DIVERSION DIKE will be measured along the centerline in lineal feet of dike constructed, regardless of width of dike specified.

RECTANGULAR INLET PROTECTION will be measured on the basis of each structure protected. If constructed as super silt fence, payment will be made as RECTANGULAR INLET PROTECTION.

FILTER FABRIC INLET PROTECTION will be measured on the basis of each structure so protected.

GEOTEXTILE FABRIC CLASS C will be measured for payment in its final position and the area calculated in square yards. Overlaps, check slots, anchor slots and buried edges will not be measured.

STONE OUTLET STRUCTURE SEDIMENT TRAP will not be measured separately for payment but shall be measured as TEMPORARY RIPRAP per ton and EROSION AND SEDIMENT CONTROL - EXCAVATION per cubic yard.

TEMPORARY DITCH CHECK URETHANE FOAM/GEOTEXTILE will be measured per each seven (7) foot length.

TEMPORARY DITCH CHECK ROLLED EXCELSIOR LOG will be measured per each 10-foot length.

TEMPORARY ROCK CHECK DAM will not be measured separately for payment, but will be measured as TEMPORARY RIPRAP per ton.

FLOTATION BOOM will be measured for payment in feet measured along the centerline of the boom.

SEDIMENT BASIN will not be measured separately for payment, but will be measured as EROSION AND SEDIMENT CONTROL - EXCAVATION per cubic yard, TEMPORARY RIPRAP by weight in tons and SEDIMENT BASIN DEWATERING DEVICE per lineal foot completed.

SEDIMENT BASIN DEWATERING DEVICE will be measured per lineal foot of drain pipe installed. Clay dam, riser pipe, concrete base for riser pipe and filter cloth over wire mesh will not be individually measured for payment, but will be considered as included in the Contract unit price for SEDIMENT BASIN DEWATERING DEVICE.

CULVERT PROTECTION – FENCE will not be measured separately for payment, but will be measured as SUPER SILT FENCE in lineal feet.

CULVERT INLET PROTECTION – STONE will not be measured separately for payment, but will be measured as TEMPORARY RIPRAP in tons.

CREEK BUFFER STRIP AND SILT FENCE will not be measured separately for payment, but will be measured as SILT FENCE in lineal feet and TEMPORARY DITCH CHECK URETHANE FOAM/ GEOTEXTILE PER Each.

### **280.30 Basis of Payment**

Payment for MANAGEMENT OF EROSION AND SEDIMENT CONTROL will be made at the Contract unit price per calendar month or fraction thereof, which payment shall constitute full compensation for furnishing all materials, labor and incidentals necessary to manage the Erosion and Sediment Control Schedule and provide co-inspection by the Erosion and Sediment Control Manager.

Payment for EROSION AND SEDIMENT CONTROL-EXCAVATION, measured as specified, will be made at the Contract unit price per cubic yard, which payment shall constitute full compensation for clearing, excavating, hauling and disposing of excavated materials, for maintaining the work and backfilling upon completion of the management of Erosion and Sediment Control. 50% of the payment for this work will be made upon the completion of the excavation and the balance will be paid upon completion of the backfilling of the facility.

Payment for EROSION AND SEDIMENT CONTROL-CLEANOUT measured as specified, will be made at the Contract unit price per cubic yard, which payment shall constitute full compensation for excavating, hauling and disposing of excavated materials and completing the work as specified.

Payment for SILT FENCE, complete in place and accepted, will be made at the Contract unit price per lineal foot of fence.

RE-ERECT SILT FENCE will be made at the Contract unit price per linear foot of silt fence re-erected. All payments shall constitute full compensation for all material, labor, equipment, tools and incidentals needed to complete the work. No payment for final removal will be made as payment is included in the bid for the first placement of the fence. Fabric found to be unusable shall be replaced and payment is included in the unit price for this item.

Payment for TEMPORARY SWALE measured as specified will be made at the Contract unit price per lineal foot of the type specified, which payment shall constitute full compensation for excavating and stabilizing temporary swales with the materials specified.

Payment for STABILIZED CONSTRUCTION ENTRANCE will be made at the Contract unit price per square yard, measured as specified, which payment shall constitute full compensation for furnishing, transporting and placing the materials specified, including all overhangs, cutting and trimming.

Payment for AGGREGATE BASE COURSE used for maintenance top dressing will be made at the Contract unit price per ton, which payment shall constitute full compensation for furnishing, transporting, placing, compacting and final removal of the materials specified.

Payment for TEMPORARY STREAM CROSSING will be made at the contract unit price per ton for TEMPORARY RIPRAP.

Payment for TEMPORARY PIPE will be made at the Contract unit price per lineal foot of pipe, of the size and type specified.

Payment for SUPER SILT FENCE, complete in place and accepted, will be made at the Contract unit price per lineal foot of fence.

Payment for TEMPORARY PIPE SLOPE DRAINS of the diameter and type specified will be made at the Contract unit price per lineal foot, which payment shall constitute full compensation for furnishing, delivering, installing, replacing and removal of the berms, pipe, flared end section and other associated materials.

Payment for TREE PROTECTION will be made at the Contract unit price per lineal foot.

TEMPORARY RIPRAP measured as specified will be made at the Contract unit price per ton which payment shall constitute full compensation for excavation as required, furnishing and placing riprap and final removal of riprap and the furnishing, placing and removal of geotextiles.

Payment for TEMPORARY STABILIZATION WITH STRAW MULCH will be made at the Contract unit price per acre which payment shall constitute full compensation for furnishing, handling, transporting, storing, and placing the materials involved. It also includes seedbed preparation, fertilizing, planting and all labor equipment, materials and incidentals necessary to complete the work as specified.

Payment for SAME-DAY STABILIZATION will be made at the Contract unit price per square yard, which payment shall constitute compensation for the expedited stabilization of areas not shown on the Plans but as directed by the Engineer. Stabilization methods and materials shall be measured and paid for at the Contract unit price for those items.

Payment for DIVERSION DIKE, measured as specified, will be made at the Contract unit price per lineal foot of the type specified, which payment shall constitute full compensation for constructing and stabilizing the dike with the specified materials.

Payment for RECTANGULAR INLET PROTECTION, complete in place and accepted, will be made at the Contract unit price for each structure protected.

Payment for FILTER FABRIC INLET PROTECTION, complete in place and accepted, will be made at the Contract unit price for each structure protected.

Payment for GEOTEXTILE FABRIC, CLASS C complete, in place and accepted will be made at the Contract unit price per square yard.

Payment for STONE OUTLET STRUCTURE SEDIMENT TRAP complete in place and accepted will be made at the Contract unit prices for TEMPORARY RIPRAP per ton and EROSION CONTROL AND SEDIMENT CONTROL - EXCAVATION per cubic yard.

Payment for TEMPORARY DITCH CHECK URETHANE FOAM/ GEOTEXTILE will be made at the Contract unit price for each seven (7) foot section installed as shown on the plans and removed as directed

Payment for TEMPORARY DITCH CHECK ROLLED EXCELSIOR LOG will be made at the Contract unit price for each 10-foot section installed, as shown on the Plans, and removed as directed.

Payment for FLOTATION BOOM will be made at the Contract unit price per lineal foot of boom installed.

Payment for SEDIMENT BASIN DEWATERING DEVICE will be made at the Contract unit price per lineal foot of drain pipe installed, which price includes clay dam, riser pipe, concrete base for riser pipe and filter cloth over wire mesh.

Payment for CULVERT INLET PROTECTION – FENCE, complete in place and accepted, will be made at the Contract unit price for SUPER SILT FENCE per lineal foot.

Payment for CULVERT INLET PROTECTION – STONE, complete in place and accepted, will be made at the Contract unit price for TEMPORARY RIPRAP per ton.

Payment for CREEK BUFFER STRIP AND SILT FENCE will be made at the Contract unit price for SILT FENCE per lineal foot and TEMPORARY DITCH CHECK URETHANE FOAM/GEOTEXTILE per each.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 1208 BRIDGE DECK DRAINAGE**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Add the following new articles:

**1208.01 Description.** BRIDGE DECK DRAINAGE shall include furnishing and installing scupper castings and steel, pvc drain pipe for bridge deck drainage, cleaning, adjusting, sealing, or removing existing scuppers, removing, replacing or cleaning and painting existing drain pipe, all as shown in the Plans and in accordance with these Specifications. Also included shall be furnishing and installing steel slip plates required to properly position and support the scuppers during concrete placement and all galvanized inserts, grout, expansion anchors, threaded rods, nuts, washers, straps, structural steel shapes and miscellaneous hardware to properly install and support the drain pipe.

The work shall also include furnishing and installing splash blocks where required in accordance with these Specifications and with the dimensions and details shown in the Plans.

**1208.02 Materials.** Materials for scuppers and drains shall conform to the requirements of Division 1000 Materials. Specific references are as follows:

Concrete Superstructure.....	1020
Reinforcing Bars.....	1006.09
Gray Iron Castings.....	1006.14
Structural Steel.....	1006.04
Steel Pipe.....	1006.19
Structural Steel Coatings.....	1008
Polyvinyl Chloride (PVC) Pipe .....	1040.03
Note: PVC Pipe, when called for, shall be Schedule 80	
Threaded Rods.....	1006.09
H.S. Steel Bolts and Washers.....	1006.08

**1208.03 Construction Methods**

- (a) Installing Scuppers and Drain Pipe. The scuppers shall be placed and properly positioned in accordance with details and to the lines, grades and dimensions shown in the Plans.

The drain pipe and fittings shall be installed and securely fastened to the structure as shown in the Plans. All pipe joints shall be watertight and shall be of the type shown in the Plans.

Downspouts shall be provided with splash blocks, or shall be connected to storm sewers or subsurface drains as indicated in the Plans and directed by the Engineer. Pre-cast concrete splash blocks from a commercial supplier will be accepted without testing or certification.

After installation of scuppers and drain pipe, all exposed steel pipe and all miscellaneous hardware not hot dipped galvanized shall be cleaned and painted in accordance with the applicable provisions of Section 506 of the Standard Specifications. All paint shall conform to the requirements of Section 1008.

- (b) Adjusting Existing Scuppers. This work shall consist of furnishing and installing material, including adjusting frames, and performing all work required to raise or lower the grates of the existing scuppers, as shown in the Plans.

Adjusting frames shall be made in two sections as shown in the Plans and shall be furnished by the Contractor. Material for adjusting frames shall conform to AASHTO M105, Class 30 or ASTM A36 (AASHTO M183).

The inside flange of the existing frame shall be cleaned and free of foreign material. The inner section of the adjusting frame is to be placed on this flange. Shims shall be brazed to the frame to assure that rocking does not occur. The upper section of the adjusting frame shall be placed directly on the top of the existing frame and brazed to it as shown in the Plans. If a satisfactory fit is not obtained, grinding as necessary and/or additional brazing will be required at no additional cost to the Authority.

- (c) Sealing Existing Scuppers. This work shall consist of sealing with concrete those existing scuppers which are not to remain in service, as shown in the Plans and as directed by the Engineer. To seal any scupper, the lower flange of the casting shall be suitably capped and the entire scupper casting filled with thoroughly consolidated concrete. Salvageable grates which are not to be reused shall be delivered to the Authorities Maintenance Yard designated in the plans.
- (d) Removing Existing Scuppers. This work shall consist of removing existing scuppers which are not to remain in service and reconstructing the bridge deck as shown in the Plans and as directed by the Engineer. The work shall include saw cutting and removing the bridge deck concrete as shown in the Plans, blast-cleaning the existing reinforcing steel, furnishing and installing supplemental reinforcing steel, and furnishing and placing Class J Concrete.

Salvageable grates and scupper castings which are not to be re-used shall be delivered to the Authority's Maintenance Yard designated in the plans.

Concrete removal shall be in accordance with Section 501 of the Standard Specifications.

After the existing concrete has been removed and the reinforcing steel has been cleaned, the Engineer will inspect the concrete surfaces. Any and all loose and unsound concrete found by such inspection shall be removed, using hand tools, to the satisfaction of the Engineer prior to the placement of concrete.

Placement of concrete shall be in accordance with the applicable portions of Section 503 of the Standard Specifications.

Furnishing and installing supplemental reinforcing steel shall be in accordance with the applicable portions of Section 508 of the Standard Specifications.

- (e) Removing Existing Drain Pipe. This work shall consist of removing existing drain pipe at locations where the pipe is no longer necessary due to sealing or removal of existing scuppers and at other locations as shown in the Plans or directed by the Engineer.

The removal shall include all miscellaneous hardware, straps and miscellaneous supports. Salvageable drain pipe and fittings shall be delivered to the Authorities Maintenance Yard designated in the plans. Unsalvageable pipe and all other material removed shall be disposed of by the Contractor outside the Tollway Right of Way.

Where existing drain pipe is to be removed from scuppers which are to remain in service, the flanges of the existing scuppers shall be protected from damage.

- (f) Cleaning and Painting Drain Pipe. This work shall consist of cleaning, painting, and refurbishing existing bridge deck drainage systems as indicated in the Plans and as directed by the Engineer, all in accordance with applicable portions of Article 506.04 of the IDOT Standard Specifications and the applicable Articles of this Section.

Where separations at existing fittings or other misalignments are found, repairs or corrections shall be made as necessary to restore the bridge drain piping to a fully functioning system.

All horizontal and vertical runs of pipe shall be power rodded and flushed. Flushing shall be done in conjunction with power rodding to assure that pipes are in a satisfactorily clean condition. All existing end caps shall be removed to facilitate power rodding of horizontal runs of pipe. Should any existing end cap unit be damaged by the Contractor's operations, it shall be replaced at no additional cost to the Authority with a P.V.C. Schedule 80 end cap unit of the same size.

Any existing pipe or fittings found, in the judgment of the Engineer, to be deteriorated beyond further functional service, shall be removed and replaced with new pipe or fittings. Replacement pipe shall be steel pipe conforming to the requirements of

Article 1006.18 or Schedule 80 PVC pipe conforming to the requirements of Article 1040.03 as directed by the Tollway. Removal of deteriorated pipe shall be measured and paid for under REMOVE EXISTING DRAIN PIPE. Replacement of deteriorated pipe will be measured and paid for under the applicable type of DRAIN PIPE.

Existing splash blocks under downspouts which are sunken or displaced shall be re-set as directed by the Engineer. The ground surface around and downstream from splash blocks shall be re-shaped as necessary to drain water away from the downspouts and into existing ditches or surface drainage systems without channeling or causing surface erosion.

Damaged or missing splash blocks shall be replaced at locations designated in the Plans or as directed by the Engineer. Pre-cast concrete splash blocks from a commercial supplier will be accepted without testing or certifications.

Re-setting and replacing splash blocks and re-shaping ground surface areas at downspouts will not be measured for payment. The cost therefore shall be considered as included in the Contract unit price for CLEAN AND PAINT EXISTING DRAIN PIPE.

- (g) Cleaning Existing Scupper. This work shall consist of cleaning existing scuppers at the locations shown in the plans or as directed by the Engineer.

All existing scuppers shall be inspected by the Contractor together with the Engineer prior to starting construction and a record kept of their condition. All debris which accumulates in the existing scuppers during construction shall be removed and disposed of by the Contractor at no additional cost to the Authority. The Contractor shall remove all debris and silt from the designated scuppers and flush them out with water.

- (h) Replacing Existing Scupper Grate. This work shall consist of removing and replacing damaged or missing scupper grates at the locations shown in the plans or as directed by the Engineer. All existing scuppers shall be inspected by the Contractor together with the Engineer prior to starting construction and a record kept of their condition. Any damage to existing scuppers or grates during construction shall be repaired to the satisfaction of the Engineer by the Contractor at no additional cost to the Authority.
- (i) Floor Drain. This work shall include furnishing and installing floor drains and all other hard-ware including galvanized steel threaded rods, clamps, washers and locknuts at the locations shown in the plans.

#### **1208.04 Method of Measurement**

SCUPPER will be measured for payment per each furnished installed, and accepted, for each type specified.

DRAIN PIPE will be measured for payment in linear feet, furnished installed and accepted, for each type and for the various sizes specified. Measurement will be along the centerline of each run of pipe from end to end. Fittings will not be measured separately for payment, but will be considered as included in the measurement for Drain Pipe.

ADJUST EXISTING SCUPPER, SEAL EXISTING SCUPPER, REMOVE EXISTING SCUPPER, CLEANING EXISTING SCUPPER and REPLACING EXISTING SCUPPER GRATE will be measured for payment per each completed and accepted.

REMOVE EXISTING DRAIN PIPE will be measured for payment in linear feet of pipe removed and salvaged or otherwise disposed of as specified. Measurement will be along the centerline of each run of pipe removed, from end to end. CLEAN AND PAINT EXISTING DRAIN PIPE will be measured for payment in linear feet of pipe cleaned, refurbished and painted as specified.

Splash blocks and re-shaping of ground surfaces will not be measured for payment.

FLOOR DRAIN will be measured for payment per each furnished installed and accepted.

#### **1208.05 Basis of Payment**

Payment for SCUPPER, measured as specified, will be made at the Contract unit price per each, for the type specified which payment shall constitute full compensation for furnishing and installing the scuppers and other materials and for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

Payment for DRAIN PIPE, measured as specified, will be made at the Contract unit price per linear foot for the type and size specified, which payment shall constitute full compensation for furnishing and installing the drain pipe, fittings, pipe supports and splash blocks; for connections to storm sewers and drains; for cleaning and painting; and for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

Payment for ADJUST EXISTING SCUPPER, measured as specified, will be made at the Contract unit price per each, which payment shall constitute full compensation for furnishing and installing all materials and for furnishing all labor, equipment, tools, and incidentals necessary to complete the work as specified.

Payment for SEAL EXISTING SCUPPER, measured as specified, will be made at the Contract unit price per each, which payment shall constitute full compensation for furnishing and placing concrete, and for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

Payment for REMOVE EXISTING SCUPPER, measured as specified, will be made at the Contract unit price per each, which payment shall constitute full compensation for sawcutting; concrete removal; blastcleaning reinforcing steel; furnishing and installing supplemental reinforcing steel; furnishing and placing concrete; delivering salvaged materials; disposal of unsalvageable material; and for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

Payment for REMOVE EXISTING DRAIN PIPE, measured as specified, will be made at the Contract unit price per linear foot, which payment shall constitute full compensation for all removal; delivery of salvaged material; disposal of unsalvageable material; and for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

Payment for CLEANING EXISTING SCUPPER, measured as specified, will be made at the Contract unit price per each, which payment shall constitute full compensation for removing and disposing of all debris; for flushing and for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

Payment for REPLACING EXISTING SCUPPER GRATE, measured as specified, will be made at the Contract unit price per each which payment shall constitute full compensation for removing and disposing of existing grates; for furnishing and installing new grates and for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

Payment for CLEAN AND PAINT EXISTING DRAIN PIPE, measured as specified, will be made at the Contract unit price per linear foot, which payment shall constitute full compensation for power rodding, flushing, repairing, refurbishing, and painting existing bridge drainage pipes; connections to storm sewers or subsurface drains; re-setting and replacing splash blocks; re-shaping ground surfaces; and for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

Payment for FLOOR DRAIN, measured as specified, will be made at the Contract unit price per each which payment shall constitute full compensation for furnishing and installing the floor drains and other materials and for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

### **SPECIAL PROVISIONS FOR**

#### **LOCAL IMPROVEMENTS AT FIELD COURT/SAUNDERS ROAD**

Prepared by Christopher B.Burke Engineering Ltd.

#### **TEMPORARY WATER SHUTDOWNS**

The City of Lake Forest shall be notified at least forty-eight hours in advance of any water shutdown. The City will determine what residences will be affected by the shutdown and supply to the CONTRACTOR shut-off notice handouts and those areas to be notified. The CONTRACTOR shall be responsible for distributing handouts to affected residences. Failure of the CONTRACTOR to distribute handouts to all affected residences shall result in a penalty in the sum of \$100.00 for each affected resident not notified. The turning of any valve other than those installed but not yet accepted by the City shall be performed by the City.

## **ISLAND REMOVAL**

Description. This work shall consist of the removal and satisfactory disposal of the existing pavement structure, curb & gutter and adjacent storm structures as shown on the plans or as directed by the ENGINEER.

General. This work shall be completed in accordance all applicable subsections Sections 205 and 440 of the "Standard Specifications". It shall be the responsibility of the CONTRACTOR to determine the thickness of the existing pavement structure, including overlays, and other appurtenances to be removed, and the extent to which they are reinforced. No additional compensation will be allowed because of variations from the conditions shown on the plans.

The CONTRACTOR shall remove all the traffic signal equipment before the designated pavement structure removal or as directed by the ENGINEER. All the traffic signal equipment shall be removed and disposed in accordance with requirements of Traffic Signal Section of the plans and to the satisfaction of the ENGINEER.

Basis of Payment. This work will be paid for at contract unit price per square foot for ISLAND REMOVAL which price shall include all materials, labor, and equipment for removal and disposal of the entire pavement structure.

## **VALVE BOXES**

Description. This work shall consist of constructing valve boxes for water mains and water services in accordance with Section 44 of the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois" and Section 602 of the latest edition of the "Standard Specifications for Road and Bridge Construction" except as modified herein.

In addition to the requirements of Sections 44-2.01 and 44-3.02 valve boxes shall meet the following requirements:

1. Adjustable valve boxes shall be provided on buried valves:
  - a. Valve boxes shall be compatible with size and type of valve protected.
  - b. Valve boxes shall be extended to finished grade.
  - c. Valve box cover shall be marked "WATER" for potable water piping valves.
  - d. Bituminous coated carbon steel valve extension stems and 2-inch square operating nuts 2 inches below the cover shall be provided.
  - e. Two valve operating tee wrenches with 2-inch square socket, 24-inch long, 1-1/2 inch pipe handle, and 48-inch long 1-1/2 inch pipe stem shall be provided.

The VALVE BOX shall have a slide type adjustment when the VALVE BOX is to be located in the pavement in conformance with Standard Drawing No. 14 in the "Standard Specifications for Water and Sewer Main Construction in Illinois".

Basis of Payment. This work will be paid for at the contract unit price each for VALVE BOXES of the diameter specified, valve extensions, operating wrenches and all excavation and backfill.

## **WATER MAIN FITTINGS**

Description. This work shall consist of furnishings and installing all tees, bends, reducers and plugs necessary to complete the water main installation as shown on the plans.

All fittings shall be wrapped in a polyethylene film as specified in the special provision for "Ductile Iron Water Main", included elsewhere herein. All fittings shall be installed using stainless steel bolts.

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

Water main fittings will be measured by weight in pounds of actual fittings installed. In lieu of weighing the fittings at the job site, the fittings may be delivered with a letter from the manufacturer certifying the weight of each type and size of fitting, subject to the review of the ENGINEER.

Ductile iron fittings and accessories will be measured in pounds as installed. Any fittings not shown on the plans, but, in the opinion of the ENGINEER, are found necessary to be installed due to unanticipated underground obstructions will also be measured for payment. The CONTRACTOR will be required to maintain a list of all items used and provide an invoiced weight for payment purposes.

Method of Measurement and Basis of Payment. This work will be paid for at the contract unit price per pound for WATER MAIN FITTINGS, which price shall be payment in full for all labor, equipment, and material, including polyethylene wrapping, testing and disinfecting, to complete the work as specified herein.

## **PRESSURE TESTING OF WATER MAINS**

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

Procedure for Test - The CONTRACTOR shall notify the City Utilities Division Personnel at least forty-eight hours prior to the pressure test. Valves will be turned on only under the supervision of City Utilities Division Personnel who will witness all pressure testing.

Each section of pipe to be tested, as determined by the ENGINEER, shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump must be disconnected for the duration of the pressure test. The pump pipe connection and all necessary apparatus, including gauges and meters,

shall be furnished by the CONTRACTOR. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevations and afterwards tightly plugged. Any cracked or defective pipes, fittings, valves, or hydrants discovered in consequence of this pressure test shall be removed and replaced by the CONTRACTOR with sound material, and test shall be repeated until satisfactory to the ENGINEER and the CITY. The provisions of AWWA C600 and C603, where applicable, shall apply.

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

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

1. Test pressure is defined as the maximum operating pressure of the section under test, and is based on the elevation of the lowest point in the line or section under test corrected to the elevation of the test gauge. Applicable provisions of AWWA C600 and C603 shall apply. The minimum duration of each leakage test shall be one (1) hour in addition to the pressure test period.

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

$$L = \frac{ND}{7400} P$$

Note: L = Allowable leakage in gallons per hour

N = Number of joints in length of pipeline tested.

D = Nominal diameter of the pipe in inches.

P = Average test pressure during leakage test in pounds per square inch gauge.

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

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

This item shall not be paid for separately, but shall be included in the contract unit price each for WATER MAIN FITTINGS.

## **DISINFECTION OF WATER MAINS**

The City Utilities Division Personnel shall be notified at least forty-eight hours before the disinfection procedure. Representatives of the Utilities Division Personnel must be present during the procedure.

A. Flushing

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

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

B. Requirement of Chlorine

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

C. Form of Applied Chlorine

Chlorine shall be applied by the method which follows, subject to the review of the ENGINEER.

Chlorination shall be made by the use of chlorine gas only. The dry gas shall be fed directly through proper devices for regulating the rate of flow and providing effective diffusion of the gas into the water within the pipe being treated. Chlorinating devices for feeding the chlorine gas must provide means for preventing the backflow of water into the chlorine. The chlorine gas shall be injected into the main at intervals of no more than 1,000 feet.

D. Point of Application

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

E. Preventing Reverse Flow

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

F. Retention Period

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

G. Chlorinating Valves and Hydrants

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

H. Final Flushing and Testing

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

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

I. Repetition of Flushing and Testing

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

This item shall not be paid for separately, but shall be included in the contract unit price each for WATER MAIN FITTINGS.

**TYPE 1 FRAME, CLOSED LID**

This item shall conform to the requirements of Section 602 and 1006 of the STANDARD SPECIFICATIONS and IDOT Standard Drawing 604001 with the following exceptions:

SANITARY SEWER MANHOLES. Lids for manholes shall have the word "SEWER" cast into them and shall be Neenah R-1772-C with self sealing lids (or an equal approved by the Engineer).

STORM SEWER MANHOLES. Lids for manholes shall have the word "STORM" cast into them and shall be Neenah R-1772-C with self sealing lids (or an equal approved by the Engineer).

VALVE VAULTS. Lids for valve vaults shall have the word "WATER" cast into them and shall be Neenah R-1772-C or an approved equal.

Prior to ordering, Contractor shall verify with the Engineer which STRUCTURES TO BE ADJUSTED shall receive new frames and lids.

This item shall not be paid for separately, but shall be included in the contract unit price each for MANHOLE of the type and diameter specified or STRUCTURE TO BE ADJUSTED of the type and size specified.

### **RESTRICTED DEPTH CATCH BASINS, OF THE DIAMETER SPECIFIED**

Description. This work shall consist of constructing a catch basin, with a frame and grate as specified open lid in accordance with Section 602 of the Standard Specifications, the details on the plans and as specified herein.

Construction Requirements. Drainage structures shall be precast reinforced concrete in accordance with Article 602.07 of the Standard Specifications.

The Contractor is responsible for tying in all existing storm sewers to the proposed structure. Any existing storm sewers that are damaged during construction shall be replaced in kind by the Contractor at no cost to the City. In locations where proposed drainage structures are to be placed in the same location as the existing drainage structure, removal of the existing structure shall be considered incidental to this item.

This work shall include all labor, equipment, excavation, removal of the existing structures (if required), backfilling, sand cushion, flat slab tops (when required), required to complete the work.

Method of Measurement. RESTRICTED DEPTH CATCH BASINS, of the diameter specified, and with the type of frame & grate or frame & lid specified, shall be measure each in place.

Basis of Payment. Drainage structures shall be paid for at the contract unit price each for RESTRICTED DEPTH CATCH BASINS, of the diameter specified, and with the type of frame and grate or frame and lid specified.

### **RESTRICTED DEPTH MANHOLES, OF THE DIAMETER SPECIFIED**

Description. This work shall consist of constructing a manhole, with the type frame and grate or frame and lid specified, in accordance with Section 602 of the Standard Specifications, the details on the plans and as specified herein.

Construction Requirements. Drainage structures shall be precast reinforced concrete in accordance with Article 602.07 of the Standard Specifications.

The Contractor is responsible for tying in all existing storm sewers to the proposed structure. Any existing storm sewers that are damaged during construction shall be replaced in kind by the Contractor at no cost to the City. In addition, the Contractor will be responsible for determining which structures require precast concrete flat slab tops in accordance with Standard Drawing 602601. Flat slab tops will only be allowed where a conical section cannot be installed due to a lack of clearance. In locations where proposed drainage structures are to be placed in the same location as the existing drainage structure, removal of the existing structure shall be included to this item.

This work shall include all labor, equipment, excavation, removal of the existing structures (if required), backfilling, sand cushion, flat slab tops (when required), required to complete the work.

Method of Measurement. RESTRICTED DEPTH MANHOLES, of the diameter specified, and with the type of frame and grate or frame and lid specified shall be measure each in place.

Basis of Payment. Drainage structures shall be paid for at the contract unit price each for RESTRICTED DEPTH MANHOLES, of the diameter specified, and with the type of frame and grate or frame and lid specified.

## **REMOVE EXISTING CULVERTS**

Description. This work shall consist of the removal of reinforced concrete, PVC, clay, ductile iron and corrugated metal storm culverts.

Construction Requirements. Existing culverts shall be removed, hauled off-site, and disposed of by the Contractor in accordance with Article 202.03 of the Standard Specifications.

Trenches resulting form the removal of pipes shall be backfilled in accordance with the applicable requirements of Article 550.07.

This work shall include all excavation, backfilling, removal and disposal of the culverts.

Method of Measurement and Basis of Payment. Culvert removal will be measured and paid for at the contract unit price per foot for REMOVE EXISTING CULVERTS of various diameters.

## **FIRE HYDRANTS TO BE REMOVED**

Description. This work shall consist of the removal of existing fire hydrants, including auxiliary valves, and plugging and blocking of abandoned watermain as approved by the ENGINEER. The fire hydrants to be removed shall become the property of the City and shall be delivered to the Public Works Facility as directed by the ENGINEER.

The hole shall be backfill with either the excavated material or crushed limestone with a CA-7 gradation, as directed by the ENGINEER and per Articles 205.04 of the Standard Specifications for Road and Bridge Construction. Any excess material shall be disposed of in accordance with Article 202.03.

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

### **SANITARY MANHOLE TO BE ADJUSTED**

Description. This work shall consist of adjusting sanitary manholes and the frame and lid in accordance with Section 602 of the Standard Specifications, the details on the plans and as specified herein and as directed by the ENGINEER.

Remove Section 602.14.

Basis of Payment. This work will be paid for at the contract unit price each for SANITARY MANHOLE TO BE ADJUSTED, which price shall be payment in full for all labor, equipment, and material necessary to complete the work as specified herein.

### **UTILITY STRUCTURES TO BE ADJUSTED**

Description. This work shall consist of adjusting utility structures and the frame and lid in accordance with Section 602 of the Standard Specifications, the details on the plans and as specified herein and as directed by the ENGINEER.

Remove Section 602.14.

Basis of Payment. This work will be paid for at the contract unit price each for UTILITY STRUCTURES TO BE ADJUSTED, which price shall be payment in full for all labor, equipment, and material necessary to complete the work as specified herein.

### **TEST HOLES**

Description. This item shall consist of excavation for the purpose of locating existing utilities at locations where conflict is possible with the proposed construction.

Construction Requirements. Test holes will be dug at locations authorized by the ENGINEER. The CONTRACTOR shall be responsible for notifying the utility concerned.

After the ENGINEER has verified the location of the utility, the test hole shall be backfill with either the excavated material or crushed limestone with a CA-7 gradation, as directed by the ENGINEER. Any excess material shall be disposed of in accordance with Article 202.03.

Basis of Payment. This item shall not be paid for separately, but shall be included in the contract unit price each for STORM SEWERS of the type and diameter specified. No separate payment will be made for stone used to backfill the test holes.

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

Description. This work shall be done in accordance with the applicable portions of Section 440 of the Standard Specifications, except as modified below.

**Construction Requirements.** The existing hot-mix asphalt surface shall be removed at a variable depth to a to provide a 2% cross-slope toward existing combination concrete curb and gutter to remain in place, a removal depth of 2 ¾" adjacent to the existing curb and gutter, and a minimum depth of ¼" as detailed in the typical section.. The grindings shall be removed from the site and the surface mechanically broomed until the surface is completely free of any loose material and debris.

**Method of Measurement and Basis of Payment.** This work shall be paid for at the contract unit price per square yard of HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH which shall include all labor and equipment necessary to complete the above work. Hot-mix asphalt removal for remaining pavement to be resurfaced not covered by the above Construction Requirements shall be paid for at the contract unit price per square yard of HOT-MIX ASPHALT SURFACE REMOVAL, ¼".

### **STORM SEWER ADJACENT TO OR CROSSING WATER MAIN**

**Description.** This work consists of constructing storm sewer of the specified diameter adjacent to or crossing water main, at the locations shown on the plans, meeting the material and installation requirements of the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and the applicable portions Section 550 of the Standard Specifications.

Pipe materials shall be ductile cast iron, cement lined, with push-on joints, Class 52, of the size as designated in the plans, and shall conform to the latest ANSI/AWWA C151/A21.51, C153/A21.53 and C110/A21.10.

**Basis of Payment.** This work shall be paid for in accordance with Article 550.096 of the Standard Specifications, except the pay item shall be STORM SEWER (WATER MAIN REQUIREMENTS), of the diameter specified, and shall include all materials, labor, equipment, concrete collars and encasing pipe with seals.

### **AGGREGATE FOR TEMPORARY ACCESS**

**Description.** This work shall consist of the construction and maintenance of an aggregate base course for maintaining access to intersecting streets and driveways as specified in Article 107.09 of the Standard Specifications. The Contractor shall provide access for all emergency vehicles and school buses, and to all abutting properties at all times during construction.

**Construction Requirements.** The Contractor shall maintain ingress and egress to all abutting properties during construction operations except for a maximum period of 4 calendar days after new concrete curb or driveway pavement is poured. Residents shall be notified as minimum of 48 hours prior to this period. Temporary driveways and entrances shall be constructed of aggregate in accordance with the applicable portions of Section 351 of the Standard Specifications and to the dimensions determined by the Engineer. The coarse aggregate shall be crushed stone or crushed gravel, gradation CA-6.

Maintenance shall consist of placing and compacting additional aggregate of the same type and gradation as the base aggregate.

After these driveway aprons have served their purpose, the suitable aggregate shall be removed, and, at the direction and approval of the Engineer, utilized for other purposes, such as aggregate base course for driveways, and embankment construction or other driveway aprons or otherwise disposed of as specified in Article 202.03 of the Standard Specifications.

This work shall include all furnishing, transporting, placing, maintaining and removing, reusing or disposing of the aggregate, as herein specified and as directed by the Engineer.

Method of Measurement and Basis of Payment. This work will be paid for at the contract unit price per TON for AGGREGATE FOR TEMPORARY ACCESS.

Payment for aggregate will be paid for its initial use only regardless of the number of times the aggregate is moved.

### **GENERAL ELECTRICAL REQUIREMENTS**

Effective: January 1, 2007

Add the following to Article 801 of the Standard Specifications:

“Maintenance transfer and Preconstruction Inspection:

General. Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall request a maintenance transfer and preconstruction site inspection, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance transfer and preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

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

Establish the approximate location and operating condition of lighting and/or traffic control systems which may be affected by the work

Marking of Existing Cable Systems. The party responsible for maintenance of any existing lighting and/or traffic control systems at the project site will, at the Contractor's request, mark and/or stake, once per location, all underground cable routes owned or maintained by the State. A project may involve multiple "locations" where separated electrical systems are involved (i.e. different controllers). The markings shall be taken to have a horizontal tolerance of at least 304.8 mm (one (1) foot) to either side.. The request for the cable locations and marking shall be made at the same time the request for the maintenance transfer and preconstruction inspection is made. The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing

systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of his work, as specified elsewhere herein. Note that the contractor shall be entitled to only one request for location marking of existing systems and that multiple requests may only be honored at the contractor's expense. No locates will be made after maintenance is transferred, unless it is at the contractor's expense.

Condition of Existing Systems. The Contractor shall conduct an inventory of all existing electrical system equipment within the project limits, which may be affected by the work, making note of any parts which are found broken or missing, defective or malfunctioning. Megger and load readings shall be taken for all existing circuits which will remain in place or be modified. If a circuit is to be taken out in its entirety, then readings do not have to be taken. The inventory and test data shall be reviewed with and approved by the Engineer and a record of the inventory shall be submitted to the Engineer for the record. Without such a record, all systems transferred to the Contractor for maintenance during construction shall be returned at the end of construction in complete, fully operating condition.”

Delete Articles 801.11 and 801.12 of the Standard Specifications.

Revise the 6<sup>th</sup> paragraph of Article 801.05(a) of the Standard Specifications to read:

Resubmittals. All submitted items reviewed and marked ‘APPROVED AS NOTED’, or ‘DISAPPROVED’ are to be resubmitted in their entirety with a disposition of previous comments to verify contract compliance at no additional cost to the state unless otherwise indicated within the submittal comments.”

Revise Article 801.11(a) of the Standard Specifications to read:

Lighting Operation and Maintenance Responsibility. The scope of work shall include the assumption of responsibility for the continuing operation and maintenance the of existing, proposed, temporary, sign and navigation lighting, or other lighting systems and all appurtenances affected by the work as specified elsewhere herein.”

Add the following to Section 801.11(a) of the Standard Specifications:

Energy and Demand Charges. The payment of basic energy and demand charges by the electric utility for existing lighting which remains in service will continue as a responsibility of the Owner, unless otherwise indicated. Unless otherwise indicated or required by the Engineer duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously at the Owner's expense and lighting systems shall not be kept in operation during long daytime periods at the Owner's expense. Upon written authorization from the Engineer to place a proposed new lighting system in service, whether the system has passed final acceptance or not, (such as to allow temporary lighting to be

removed), the Owner will accept responsibility for energy and demand charges for such lighting, effective the date of authorization. All other energy and demand payments to the utility shall be the responsibility of the Contractor until final acceptance.”

Add the following to Section 801 of the Standard Specifications:

“Lighting Cable Identification. Each wire installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.”

“Lighting Cable Fuse Installation. Standard fuse holders shall be used on non-frangible (non-breakaway) light pole installations and quick-disconnect fuse holders shall be used on frangible (breakaway) light pole installations. Wires shall be carefully stripped only as far as needed for connection to the device. Over-stripping shall be avoided. An oxide inhibiting lubricant shall be applied to the wire for minimum connection resistance before the terminals are crimped-on. Crimping shall be performed in accordance with the fuse holder manufacturer's recommendations. The exposed metal connecting portion of the assembly shall be taped with two half-lapped wraps of electrical tape and then covered by the specified insulating boot. The fuse holder shall be installed such that the fuse side is connected to the pole wire (load side) and the receptacle side of the holder is connected to the line side.”

Revise the 2<sup>nd</sup> and 3<sup>rd</sup> sentences of the second paragraph of Article 801.02 of the Standard Specifications to read:

“Unless otherwise indicated, materials and equipment shall bear the UL label, or an approved equivalent, whenever such labeling is available for the type of material or equipment being furnished.”

## **ELECTRIC UTILITY SERVICE CONNECTION (COMED)**

Effective: January 1, 2002

Revised February 1, 2005

**Description.** This item shall consist of payment for work performed by ComEd in providing or modifying electric service as indicated. THIS MAY INVOLVE WORK AT MORE THAN ONE ELECTRIC SERVICE. For summary of the Electrical Service Drop Locations see the schedule contained elsewhere herein.

## **CONSTRUCTION REQUIREMENTS**

**General.** It shall be the Contractor's responsibility to contact ComEd. The Contractor shall coordinate his work fully with the ComEd both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement. **Please contact ComEd, New Business Center Call Center, at 866 NEW ELECTRIC (1-866-639-3532) to begin the service connection process.**

**The Call Center Representatives will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of project.**

The Contractor should make particular note of the need for the earliest attention to arrangements with ComEd for service. In the event of delay by ComEd, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution.

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

For bidding purposes, this item shall be estimated as \$2500.00

**Basis Of Payment.** This work will be paid for at the contract lump sum price for **ELECTRIC UTILITY SERVICE CONNECTION** which shall be reimbursement in full for electric utility service charges.

Designers Note: The estimate of cost of service connections for bidding purposes shall be provided by Bureau of Electrical Operations.

## **ELECTRIC SERVICE INSTALLATION**

Effective: January 1, 2007

**Description.** This item shall consist of all material and labor required to extend, connect or modify the electric services, as indicated or specified, which is over and above the work performed by the utility. Unless otherwise indicated, the cost for the utility work, if any, will be reimbursed to the Contractor separately under ELECTRIC UTILITY SERVICE CONNECTION. This item may apply to the work at more than one service location and each will be paid separately.

**Materials.** Materials shall be in accordance with the corresponding material Articles for the materials being used under this pay item.

## **CONSTRUCTION REQUIREMENTS**

**General.** The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work not covered by contract pay items required to complete the electric service work in complete compliance with the requirements of the utility.

No additional compensation will be allowed for work required for the electric service, even though not explicitly shown on the Drawings or specified herein

**Method Of Measurement.** Electric Service Installation shall be counted, each.

**Basis Of Payment.** This work will be paid for at the contract unit price each for **ELECTRIC SERVICE INSTALLATION** which shall be payment in full for the work specified herein.

**Ground Rod**

Effective: January 1, 2007

**Description.** This item shall consist of furnishing, installing and connecting ground rods for the grounding of service neutral conductors and for supplementing the equipment grounding system via connection at poles or other equipment throughout the system. All materials and work shall be in accordance with Article 250 of the NEC.

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

Item	Article/Section
(a) Grounding Electrodes.....	1087.01(b)
(b) Grounding Electrode Conductors.....	1087.01(a)
(c) Access Well.....	1087.01(c)

**CONSTRUCTION REQUIREMENTS**

**General.** All connections to ground rods, structural steel or fencing shall be made with exothermic welds. Where such connections are made to insulated conductors, the connection shall be wrapped with at least 4 layers of electrical tape extended 152.4 mm (six inches) onto the conductor insulation.

Ground rods shall be driven so that the tops of the rod are 609.6 mm (24 inches) below finished grade. Where indicated, ground wells shall be included to permit access to the rod connections.

Where indicated, ground rods shall be installed through concrete foundations.

Where ground conditions, such as rock, preclude the installation of the ground rod, the ground rod may be deleted with the approval of the Engineer.

Where a ground field of "made" electrodes is provided, such as at control cabinets, the exact locations of the rods shall be documented by dimensioned drawings as part of the Record Drawings.

Ground rod connection shall be made by exothermic welds. Ground wire for connection to foundation steel or as otherwise indicated shall be stranded uncoated bare copper in accordance the applicable requirements of ASTM Designation B-3 and ASTM Designation B-8 and shall be included in this item. Unless otherwise indicated, the wire shall not be less than No. 2 AWG.

Where connections are made to epoxy coated reinforcing steel, the epoxy coating shall be sufficiently removed to facilitate the exothermic weld.

**Method Of Measurement.** Ground rods shall be counted, each. Ground wires and connection of ground rods at poles shall be included in this pay item.

**Basis Of Payment.** This item shall be paid at the contract unit price each for GROUND ROD, of the diameter and length indicated which shall be payment in full for the material and work described herein.

### **Trench and Backfill for Electrical Work**

Effective: January 1, 2007

Revise the first sentence of Article 819.03(a) of the Standard Specifications to read:

“Trench. Trenches shall have a minimum depth of 30 in. (760 mm) or as otherwise indicated on the plans, and shall not exceed 12 in. (300 mm) in width without prior approval of the Engineer.”

### **Wire and Cable**

Effective: January 1, 2007

Revise the second sentence of the first paragraph of Article 1066.02(a) 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.”

Revise the second paragraph of Article 1066.02(b) to read:

“Uncoated conductors shall be according to ASTM B3, ICEA S-95-658/NEMA WC70, and UL Standard 44. Coated conductors shall be according to ASTM B 33, ASTM B 8, ICEA S-95-658/NEMA WC70 and UL Standard 44.”

Revise the third paragraph of Article 1066.02(b) to read:

“All conductors shall be stranded. Stranding meeting ASTM B 8, ICEA S-95-658/NEMA WC70 and UL Standard 44. Uncoated conductors meeting ASTM B 3, ICEA S-95-658/NEMA WC70 and UL Standard 44.”

Revise the first sentence of Article 1066.03(a)(1) to read:

“General. Cable insulation designated as XLP shall incorporate cross-linked polyethylene (XLP) insulation as specified and shall meet or exceed the requirements of ICEA S-95-658, NEMA WC70, U.L. Standard 44.”

Add the following to Article 1066.03(a)(1) of the Standard Specifications:

“The cable shall be rated 600 volts and shall be UL Listed Type RHH/RHW/USE.”

Revise the Aerial Electric Cable Properties table of Article 1066.03(a)(3) to read:

Aerial Electric Cable Properties

Phase Conductor		Messenger wire			
Size AWG	Stranding	Average Insulation Thickness		Minimum Size AWG	Stranding
		mm	mils		
6	7	1.1	(45)	6	6/1
4	7	1.1	(45)	4	6/1
2	7	1.1	(45)	2	6/1
1/0	19	1.5	(60)	1/0	6/1
2/0	19	1.5	(60)	2/0	6/1
3/0	19	1.5	(60)	3/0	6/1
4/0	19	1.5	(60)	4/0	6/1

Revise the first paragraph of Article 1066.03(b) to read:

“EPR Insulation. Cable insulation shall incorporate ethylene propylene rubber (EPR) as specified and the insulation shall meet or exceed the requirements of ICEA S-95-658, NEMA Standard Publication No. WC70, and U.L. Standard 44, as applicable.”

Add the following to Article 1066.03(b) of the Standard Specifications:

“Cable sized No. 2 AWG and smaller shall be U.L. listed Type RHH/RHW and may be Type RHH/RHW/USE. Cable sized larger than No. 2 AWG shall be U.L. listed Type RHH/RHW/USE.”

Revise Article 1066.04 to read:

“Aerial Cable Assembly. The aerial cable shall be an assembly of insulated aluminum conductors according to Section 1066.02 and 1066.03. Unless otherwise indicated, the cable assembly shall be composed of three insulated conductors and a steel reinforced bare aluminum conductor (ACSR) to be used as the ground conductor. Unless otherwise indicated, the code word designation of this cable assembly is “Palomino”. The steel reinforced aluminum conductor shall conform to ASTM B-232. The cable shall be assembled according to ANSI/ICEA S-76-474.”

Revise the second paragraph of Article 1066.05 to read:

“The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing.”

Revise Article 1066.08 to read:

“Electrical Tape. Electrical tape shall be all weather vinyl plastic tape resistant to abrasion, puncture, flame, oil, acids, alkalis, and weathering, conforming to Federal Specification MIL-I-24391, ASTM D1000 and shall be listed under UL 510 Standard. Thickness shall not be less than 0.215 mm (8.5 mils) and width shall not be less than 20 mm (3/4-inch).”

**Luminaire**

Effective: January 1, 2007

Add the following to first paragraph of Article 1067(c) of the Standard Specifications:

“The reflector shall not be altered by paint or other opaque coatings which would cover or coat the reflecting surface. Control of the light distribution by any method other than the reflecting material and the aforementioned clear protective coating that will alter the reflective properties of the reflecting surface is unacceptable”

Add the following to Article 1067(e) of the Standard Specifications:

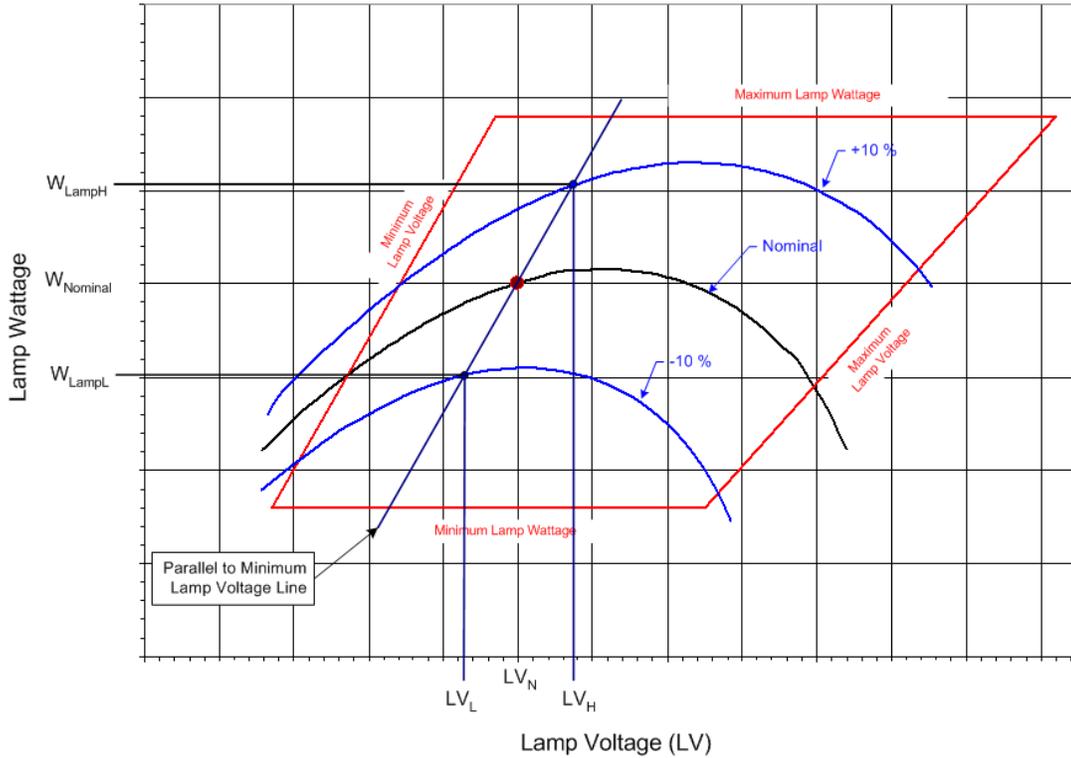
“The ballast shall be a High Pressure Sodium, high power factor, constant wattage auto-regulator, lead type (CWA) for operation on a nominal 240 volt system.”

Revise Article 1067(e)(1) of the Standard Specifications to read:

“The high pressure sodium, auto-regulator, lead type (CWA) ballast shall be designed to ANSI Standards and shall be designed and rated for operation on a nominal 240 volt system. The ballast shall provide positive lamp ignition at the input voltage of 216 volts. It shall operate the lamp over a range of input voltages from 216 to 264 volts without damage to the ballast. It shall provide lamp operation within lamp specifications for rated lamp life at input design voltage range. Operating characteristics shall produce output regulation not exceeding the following values:

<b>Nominal Ballast Wattage</b>	<b>Maximum Ballast Regulation</b>
750	25%
400	26%
310	26%
250	26%
150	24%
70	18%

For this measure, regulation shall be defined as the ratio of the lamp watt difference between the upper and lower operating curves to the nominal lamp watts; with the lamp watt difference taken within the ANSI trapezoid at the nominal lamp operating voltage point parallel to the minimum lamp volt line:



$$\text{Ballast Regulation} = \frac{W_{LampH} - W_{LampL}}{W_{LampN}} \times 100$$

where:

$W_{LampH}$  = lamp watts at +10% line voltage when Lamp voltage =  $LV_H$

$W_{LampL}$  = lamp watts at -10% line voltage when lamp voltage =  $LV_L$

$W_{lampN}$  = lamp watts at nominal lamp operating voltage =  $LV_N$

Wattage	Nominal Lamp Voltage, $LV_N$	$LV_L$	$LV_H$
750	120v	115v	125v
400	100v	95v	105v
310	100v	95v	105v
250	100v	95v	105v
150	55v	50v	60v
70	52v	47v	57v

Ballast losses, based on cold bench tests, shall not exceed the following values:

Nominal Ballast Wattage	Maximum Ballast Losses
750	14.0%
400	17.0%
310	19.0%
250	19.0%
150	26.0%
70	34.0%

Ballast losses shall be calculated based on input watts and lamp watts at nominal system voltage as indicated in the following equation:

$$\text{Ballast Losses} = \frac{W_{Line} - W_{Lamp}}{W_{Lamp}} \times 100$$

where:

$W_{line}$  = line watts at nominal system voltage

$W_{lamp}$  = lamp watts at nominal system voltage

Ballast output to lamp. At nominal system voltage and nominal lamp voltage, the ballast shall deliver lamp wattage with the variation specified in the following table. Example: *For a 400w luminaire, the ballast shall deliver 400 watts ±2.5% at a lamp voltage of 100v for the nominal system voltage of 240v which is the range of 390w to 410w.*

Nominal Ballast Wattage	Output to lamp variation
750	± 2.0%
400	± 2.5%
310	± 2.5%
250	± 4.0%
150	± 4.0%
70	± 4.0%

Ballast output over lamp life. Over the life of the lamp the ballast shall produce average output wattage of the nominal lamp rating as specified in the following table. Lamp wattage readings shall be taken at 5-volt increments throughout the ballast trapezoid. Reading shall begin at the lamp voltage ( $L_v$ ) specified in the table and continue at 5 volt increments until the right side of the trapezoid is reached. The lamp wattage values shall then be averaged and shall be within the specified value of the nominal ballast rating. Submittal documents shall include a tabulation of the lamp wattage vs. lamp voltage readings. Example: *For a 400w luminaire, the averaged lamp wattage reading shall not exceed the range of ±3% which is 388 to 412 watts"*

Nominal Ballast Wattage	LV Readings begin at	Maximum Wattage Variation
750	110v	± 3%
400	90v	± 3%
310	90v	± 3%
250	90v	± 4%
150	50v	± 4%
70	45v	± 5%

Add the following to Article 1067(f) of the Standard Specifications:

“Independent Testing. Independent testing of luminaires shall be required whenever the quantity of luminaires of a given wattage and distribution, as indicated on the plans, is 50 or more. For each luminaire type to be so tested, one luminaire plus one luminaire for each 50 luminaires shall be tested. Example: *A plan quantity of 75 luminaires would dictate that 2 to be tested; 135 luminaires would dictate that three be tested.*” If the luminaire performance table is missing from the contract documents, the luminaire(s) shall be tested and the test results shall be evaluated against the manufacturer’s published data. The test luminaire(s) results shall be equal to or better than the published data. If the test results indicated performance not meeting the published data, the test luminaire will be designated as failed and corrective action as described herein shall be performed.

The Contractor shall be responsible for all costs associated with the specified testing, including but not limited to shipping, travel and lodging costs as well as the costs of the tests themselves, all as part of the bid unit price for this item. Travel, lodging and other associated costs for travel by the Engineer shall be direct-billed to or shall be pre-paid by the Contractor, requiring no direct reimbursement to the Engineer or the independent witness, as applicable”

The Contractor shall select one of the following options for the required testing with the Engineer's approval:

- a. Engineer Factory Selection for Independent Lab: The Contractor may select this option if the luminaire manufacturing facility is within the state of Illinois. The Contractor shall propose an independent test laboratory for approval by the Engineer. The selected luminaires shall be marked by the Engineer and shipped to the independent laboratory for tests.
- b. Engineer Witness of Independent Lab Test: The Contractor may select this option if the independent testing laboratory is within the state of Illinois. The Engineer shall select, from the project luminaires at the manufacturer’s facility or at the Contractor's storage facility, luminaires for testing by the independent laboratory.

- c. Independent Witness of Manufacturer Testing: The independent witness shall select from the project luminaires at the manufacturer's facility or at the Contractor's storage facility, the luminaires for testing. The Contractor shall propose a qualified independent agent, familiar with the luminaire requirements and test procedures, for approval by the Engineer, to witness the required tests as performed by the luminaire manufacturer.

The independent witness shall as a minimum meet the following requirements:

- ▶ Have been involved with roadway lighting design for at least 15 years.
- ▶ Not have been the employee of a luminaire or ballast manufacturer within the last 5 years.
- ▶ Not associated in any way (plan preparation, construction or supply) with the particular project being tested.
- ▶ Be a member of IESNA in good standing.
- ▶ Provide a list of professional references.

This list is not an all inclusive list and the Engineer will make the final determination as to the acceptability of the proposed independent witness.

- d. Engineer Factory Selection and Witness of Manufacturer Testing: The Contractor may select this option if the luminaire manufacturing facility is within the state of Illinois. At the Manufacturer's facility, the Engineer shall select the luminaires to be tested and shall be present during the testing process. The Contractor shall schedule travel by the Engineer to and from the Manufacturer's laboratory to witness the performance of the required tests."

Add the following to Article 1067.02(a)(1) of the Standard Specifications:

"The beam of maximum candlepower for luminaires specified or shown to have a 'medium' distribution shall be at 70 degrees from the horizontal  $\pm$  2.5 degrees. Submittal information shall identify the angle."

Revise Article 1067.06(a)(1) of the Standard Specifications to read:

"The lamps shall be of the clear type and shall have a color of 1900° to 2200° Kelvin."

Revise Article 1067.06(a)(4) of the Standard Specifications to read:

<b>Lamp Wattage</b>	<b>Initial Lumens</b>	<b>Mean Lumens</b>	<b>Rated Life (Hours)</b>	<b>Lamp Voltage</b>
50	4,000	3,600	24,000	52
70	6,300	5,450	24,000	52
100	9,400	8,000	24,000	55
150	15,800	13,800	24,000	55
200	21,400	19,260	24,000	100
250	27,000	24,300	24,000	100
310	37,000	33,300	24,000	100
400	50,000	45,000	24,000	100
750	105,000	94,500	24,000	120

Add the following table(s) to Article 1067 of the Standard Specifications:

**IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE**

<b>GIVEN CONDITIONS</b>		
<b>ROADWAY DATA</b>	Pavement Width	120 (ft)
	Number of Lanes	10
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
<b>LIGHT POLE DATA</b>	Mounting Height	47.5 (ft)
	Mast Arm Length	12 (ft)
	Pole Set-Back From Edge of Pavement	6 (ft)
<b>LUMINAIRE DATA</b>	Lamp Type	HPS
	Lamp Lumens	50,000
	I.E.S. Vertical Distribution	Medium
	I.E.S. Control Of Distribution	Cutoff
	I.E.S. Lateral Distribution	Type III
	Total Light Loss Factor	0.7
<b>LAYOUT DATA</b>	Spacing	240 (ft)
	Configuration	Opposite
	Luminaire Overhang over edge of pavement	6 (ft)

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

<b>PERFORMANCE REQUIREMENTS</b>		
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**NOTE:** These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

<b>ILLUMINATION</b>	Ave. Horizontal Illumination, $E_{AVE}$	11 Lux (Min)	16 Lux (Max)
	Uniformity Ratio, $E_{AVE}/E_{MIN}$	2.5 (Max)	
<b>LUMINANCE</b>	Average Luminance, $L_{AVE}$	0.7 Cd/m <sup>2</sup> (Min)	1.2 Cd/m <sup>2</sup> (Min)
	Uniformity Ratio, $L_{AVE}/L_{MIN}$	2.5 (Max)	
	Uniformity Ratio, $L_{MAX}/L_{MIN}$	6.0 (Max)	
	Veiling Luminance Ratio, $L_V/L_{AVE}$	0.3 (Max)	

## **Maintenance of Lighting Systems**

Effective: January 1, 2007

Replace Article 801.11 and 801.12 of the Standard Specifications with the following:

Effective the date the Contractor's activities (electrical or otherwise) at the job site begin, the Contractor shall be responsible for the proper operation and maintenance of all existing and proposed lighting systems which are part of, or which may be affected by the work until final acceptance or as otherwise determined by the Engineer.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting systems which may be affected by the work. The request for the maintenance preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained.

### **Maintenance of Existing Lighting Systems**

**Existing lighting systems.** Existing lighting systems shall be defined as any lighting system or part of a lighting system in service prior to this contract. The contract drawings indicate the general extent of any existing lighting, but whether indicated or not, it remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications and failure to do so will not be justification for extra payment or reduced responsibilities.

#### **Extent of Maintenance.**

**Partial Maintenance.** Unless otherwise indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work, the Contractor needs only to maintain the affected circuits. The affected circuits shall be isolated by means of in-line waterproof fuse holders as specified elsewhere and as approved by the Engineer.

**Full Maintenance.** If the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work, the Contractor shall maintain the entire controller and all associated circuits.

**Maintenance of Proposed Lighting Systems**

**Proposed Lighting Systems.** Proposed lighting systems shall be defined as any lighting system or part of a lighting system which is to be constructed under this contract.

The Contractor shall be fully responsible for maintenance of all items installed under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, Contractor operations, or other means. The potential cost of replacing or repairing any malfunctioning or damaged equipment shall be included in the bid price of this item and will not be paid for separately.

**Lighting System Maintenance Operations**

The Contractor's responsibility shall include all applicable responsibilities of the Electrical Maintenance Contract, State of Illinois, Department of Transportation, Division of Highways, District One. These responsibilities shall include the maintenance of lighting units (including sign lighting), cable runs and lighting controls. In the case of a pole knockdown or sign light damage caused by normal vehicular traffic, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the Engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the Engineer. Uncorrected deficiencies may be designated by the Engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the Contractor will be allowed to perform corrective action on specific lighting system equipment.

<b>INCIDENT OR PROBLEM</b>	<b>SERVICE RESPONSE TIME</b>	<b>SERVICE RESTORATION TIME</b>	<b>PERMANENT REPAIR TIME</b>
Control cabinet out	1 hour	4 hours	7 Calendar days
Hanging mast arm	1 hour to clear	na	7 Calendar days
Radio problem	1 hour	4 hours	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	na

INCIDENT OR PROBLEM	SERVICE RESPONSE TIME	SERVICE RESTORATION TIME	PERMANENT REPAIR TIME
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	na
Outage of 75% of lights on one tower	1 hour	4 hours	na
Outage of light nearest RR crossing approach, Islands and gores	1 hour	4 hours	na
Outage (single or multiple) found on night outage survey or reported to EMC	na	na	7 Calendar days
Navigation light outage	na	na	24 hours

- **Service Response Time** -- amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.
- **Service Restoration Time** – amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)
- **Permanent Repair Time** – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. Repeated failures and/or a gross failure of maintenance shall result in the State's Electrical Maintenance Contractor being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

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

### **Operation of Lighting**

The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods. The contractor shall demonstrate to the satisfaction of the Engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

**Basis of Payment.** Maintenance of lighting systems shall be paid for at the contract unit price per calendar month or fraction thereof for **MAINTENANCE OF LIGHTING SYSTEM**, which shall include all work as described herein.

### **Luminaire Safety Cable Assembly**

Effective: January 1, 2007

**Description:** This item shall consist of providing a luminaire safety cable assembly as specified herein and as indicated in the plans.

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

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

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

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

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

## **CONSTRUCTION REQUIREMENTS**

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

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

## **Foundations**

Effective: January 1, 2007

### Light Pole Foundation:

Delete the third sentence of Article 836.03(a) of the Standard Specifications. Ground Rods will be paid for under a separate pay item.

### Tower Foundation:

Delete the third paragraph of Article 837.03 of the Standard Specifications. Ground Rods will be paid for under a separate pay item.

## **Underground Raceways**

Effective: January 1, 2007

Revise Article 810.03 of the Standard Specifications to read:

“Installation. All underground conduit shall have a minimum depth of 30-inches (700 mm) below the finished grade.”

Add the following to Article 810.03 of the Standard Specifications:

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

Add the following to Article 810.03 of the Standard Specifications:

“All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 300 mm (12”) or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped. The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap. The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 3 mm (0.125”) thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring.”

Add the following to Article 810.03(c) of the Standard Specifications:

“Coilable non-metallic conduit shall be machine straightened to remove the longitudinal curvature caused by coiling the conduit onto reels prior to installing in trench, encasing in concrete or embedding in structure. The straightening shall not deform the cross-section of the conduit such that any two measured outside diameters, each from any location and at any orientation around the longitudinal axis along the conduit differ by more than 6 mm (0.25”).” The longitudinal axis of the straightened conduit shall not deviate by more than 20 mm per meter (0.25” per foot” from a straight line. The HDPE and straightening mechanism manufacturer operating temperatures shall be followed.

### **LIQUIDTIGHT FLEXIBLE METAL CONDUIT, ¾”**

Description. This item shall consist of furnishing and installing liquid tight metallic conduit from the junction boxes to the outside-mounted underpass lighting units on the tollway mainline.

Material. All materials used shall be liquid tight and adhere to the National Electric Code as well as applicable portions of Section 1088 of the Standard Specifications. Conduit must also adhere to Section 811 of the Standard Specifications. The conduit is to be connected to rigid conduit with fittings which must conform to applicable sections of 811 of the Standard Specifications.

Installation. The conduit shall be fastened firmly to the junction box, as well as the underpass lighting unit, as shown on the plans.

Method of Measurement. This item will be measured per unit foot. Conduit fittings are considered incidental to this item, no additional compensation will be allowed.

Basis of Payment. This work shall be paid for at the Contract unit price foot for LIQUIDTIGHT FLEXIBLE METAL CONDUIT, ¾” which will be paid in full upon furnishing and installing the conduit as indicated on the plans.

### **TEMPORARY LIGHTING CONTROLLER**

Installation. The temporary controller is to be installed at the location designated on the plans. The Contractor must contact John Pribich of ComEd at 630-437-2212 10 to 14 days in advance to schedule the connection. Once the controller has been installed, an overhead feed from the controller must be installed to the luminaires shown on the plans.

The temporary controller needs to be rated at 100 amps and will consist of a cast aluminum weatherproof cabinet, a 150 amp main circuit breaker, electrically operated mechanically held 150 amp contactor, control circuit, digital astronomical timer control, bus bars, barrier blocks, fourteen 30 amp lighting circuit breakers and two spare 30 amp circuit breakers. Allow 3-4 weeks for manufacturing of temporary controller.

Equipment shall be as shown on the plans or approved equals and shall be wired as indicated on the plans.

Basis of Payment. This work will be paid for at the contract unit price each for TEMPORARY LIGHTING CONTROLLER which price shall be payment in full for furnishing and installing this equipment as shown on the plans.

### **MAST ARM, STEEL, STREET LIGHTING, 12 FT**

Description. This item will consist of installing and aligning a steel mast arm to which a street light luminaire will be attached. The arm will be attached to a traffic signal pole constructed to accept the arm.

Material. The mast arm must meet the requirements of IDOT Material Specification 1069. The mast arm for the combination pole must meet the requirements and dimensions of IDOT Standard Drawing 877011.

Installation. The mast arm must be installed on the combination pole as shown on the Standard Drawing 877011. The mast arm must be attached to the pole by slipping the arm over the top of the pole and securing the arm to the pole with two stainless steel hex-head bolts. The pole and arm must be properly orientated in relation to the street, as outlined under IDOT Standard Specification 830.03.

Method of Measurement. The item will be measured per each arm installed, complete.

Basis of Payment. This work will be paid for at the contract unit price each for MAST ARM, STEEL, STREET LIGHTING, 12 FT. which shall be payment in full for furnishing and installing the equipment as shown on the plans.

### **LIGHT POLE, WOOD, 80 FOOT, CLASS 3, WITH 15FT MAST ARM TEMPORARY WOOD POLE, 60 FT., CLASS 4 TEMPORARY WOOD POLE, 70 FT., CLASS 3, 15 FT. MAST ARM**

Description. This item will consist of furnishing and installing a temporary wood pole of the size and description as shown on the plans. For poles denoted to include mast arms, this item also includes furnishing, installing and aligning a steel mast arm to which a street light luminaire will be attached.

Material. The wood pole and mast arm must meet the requirements of IDOT Material Specification 1069.

Installation. The wood pole must be installed as indicated in the IDOT Standard Specifications section 830.03, in the plans and/or as directed by the engineer. The mast arm must be attached to the pole by slipping the arm over the top of the pole and securing the arm to the pole with two stainless steel hex-head bolts. The pole and arm must be properly orientated in relation to the street, as outlined under IDOT Standard Specification 830.03.

Method of Measurement. The item will be measured per each pole installed, complete.

Basis of Payment. This work will be paid for at the contract unit price each for WOOD POLE, SIZE AND CLASS AS SPECIFIED, AND WOOD POLE, SIZE AND CLASS AS SPECIFIED, 15FT. MAST ARM which shall be payment in full for furnishing and installing the equipment as shown on the plans.

### **REMOVAL OF EXISTING LIGHTING UNIT, SALVAGE POLE FOUNDATION, REMOVED**

Description. This item will consist of removing an existing light pole and existing light pole foundation.

Removal. The existing light pole shall be removed from the existing foundation as outlined under IDOT Standard Specifications section 842.03. The pole is property of ISTHA and shall be returned to the M-06 garage, Marengo-Hampshire exit on I-90. An A-14 will be needed with the amounts. Contractor is to call Mark Dalka at 630-399-0748 or the garage x3506 prior to delivery to set up assistance with unloading material. The foundation shall be removed in accordance with section 842.04 under IDOT's Standard Specifications.

Method of Measurement. The item will be measured per each pole removed and returned to ISTHA or per each foundation removed.

Basis of Payment. This work will be paid for at the contract unit price each for REMOVAL OF EXISTING LIGHTING UNIT, SALVAGE or POLE FOUNDATION, REMOVED which shall be payment in full for furnishing and installing the equipment as shown on the plans.

### **TRAFFIC SIGNAL SPECIFICATIONS**

Effective: May 22, 2002

Revised: January 1, 2007

These Traffic Signal Special Provisions and the "District One Standard Traffic Signal Design Details" supplement the requirements of the State of Illinois "Standard Specifications for Road and Bridge Construction." The intent of these Special Provisions is to prescribe the materials and construction methods commonly used for traffic signal installations. All material furnished shall be new. The locations and the details of all installations shall be as indicated on the Plans or as directed by the Engineer. The work to be done under this contract consists of furnishing and installing all traffic signal work as specified in the Plans and as specified herein in a manner acceptable and approved by the Engineer.

### **SECTION 720 SIGNING**

#### **MAST ARM SIGN PANELS.**

Add the following to Section 720.02 of the Standard Specifications:

Signs attached to poles or posts (such as mast arm signs) shall have mounting brackets and sign channels which are equal to and completely interchangeable with those used by the District Sign Shops. Signfix Aluminum Channel Framing System is currently recommended, but other brands of mounting hardware are acceptable based upon the Department's approval.

## **DIVISION 800 ELECTRICAL**

### **INSPECTION OF ELECTRICAL SYSTEMS.**

Add the following to Article 801.10 of the Standard Specifications:

All cabinets including temporary traffic signal cabinets shall be assembled by an approved equipment supplier in District One. The Department reserves the right to request any controller and cabinet to be tested at the equipment supplier facilities prior to field installation, at no extra cost to this contract. All railroad interconnected (including temporary railroad interconnect) controllers and cabinets shall be new, built, tested and approved by the controller equipment vendor, in the vendor's District One facility, prior to field installation. The vendor shall provide the technical equipment and assistance as required by the Engineer to fully test this equipment.

### **DAMAGE TO TRAFFIC SIGNAL SYSTEM.**

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

Any damaged equipment or equipment not operating properly from any cause whatsoever shall be repaired with new equipment provided by the Contractor at no additional cost to the Contract and or owner of the traffic signal system, all as approved by the Engineer. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted. Cable splices outside the controller cabinet shall not be allowed.

### **RESTORATION OF WORK AREA.**

Add to Section 801 of the Standard Specifications:

Restoration of the traffic signal work area shall be included in the related pay items such as foundation, conduit, handhole, trench and backfill, etc. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded. Restoration of the work area shall be included in the contract without any extra compensation allowed to the Contractor.

### **SUBMITTALS.**

Revise Article 801.05 of the Standard Specifications to read:

The Contractor shall provide:

- a. All material approval requests shall be submitted at the preconstruction meeting, including major traffic signal items listed in the table in Article 801.05..

- b. All material or equipment which are similar or identical shall be the product of the same manufacturer, unless necessary for system continuity. Traffic signal materials and equipment shall bear the U.L. label whenever such labeling is available.
- c. Seven (7) copies of a letter from the Traffic Signal Contractor on company letterhead listing the contract number or permit number, project location/limits, pay item description, pay code number, manufacturer's name and model numbers of the proposed equipment and stating that the proposed equipment meets all contract requirements. The letter will be reviewed by the Traffic Design Engineer to determine whether the equipment to be used is approvable.
- d. Seven (7) copies of shop drawings for mast arm poles and assemblies, including combination mast arm poles, are required. A minimum of two (2) copies of all other material catalog cuts are required. Submittals for equipment and materials shall be complete. Partial or incomplete submittals will be returned without review.
- e. Certain non-standard mast arm poles and assemblies will require additional review from IDOT's Central Office. Examples include ornamental/decorative and non-standard length mast arm pole assemblies. The Contractor shall account for the additional review time in his schedule.
- f. The contract number or permit number, project location/limits and corresponding pay code number must be on each sheet of the letter, material catalog cuts and mast arm poles and assemblies drawings.
- g. Where certifications and/or warranties are specified, the information submitted for approval shall include certifications and warranties. Certifications involving inspections, and/or tests of material shall be complete with all test data, dates, and times.
- h. After the Engineer reviews the submittals for conformance with the design concept of the project, the Engineer will stamp the drawings indicating their status as 'Approved', 'Approved-As-Noted', 'Disapproved', or 'Information Only'. Since the Engineer's review is for conformance with the design concept only, it is the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, layout drawings, or other documents by the Department's approval thereof. The Contractor must still be in full compliance with contract and specification requirements.
- i. All submitted items reviewed and marked 'APPROVED AS NOTED', or 'DISAPPROVED' are to be resubmitted in their entirety, unless otherwise indicated within the submittal comments, with a disposition of previous comments to verify contract compliance at no additional cost to the contract.
- j. Exceptions, Deviations and Substitutions. In general, exceptions to and deviations from the requirements of the Contract Documents will not be allowed. It is the Contractor's responsibility to note any deviations from Contract requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution is superior to the material or equipment required by the Contract Documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.

#### **MAINTENANCE AND RESPONSIBILITY.**

Revise Article 801.11 of the Standard Specifications to read:

- a) Existing traffic signal installations and/or any electrical facilities at all or various locations may be altered or reconstructed totally or partially as part of the work on this Contract. The Contractor is hereby advised that all traffic control equipment, presently installed at these locations, may be the property of the State of Illinois, Department of Transportation, Division of Highways, County, Private Developer, or the Municipality in which they are located. Once the Contractor has begun any work on any portion of the project, all traffic signals within the limits of this contract or those which have the item "Maintenance of Existing Traffic Signal Installation," "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation," shall become the full responsibility of the Contractor. The Contractor shall supply the engineer and the Department's Electrical Maintenance Contractor a 24-hour emergency contact name and telephone number.
- b) When the project has a pay item for "Maintenance of Existing Traffic Signal Installation," "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation," the Contractor must notify both the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 and the Department's Electrical Maintenance Contractor, of their intent to begin any physical construction work on the Contract or any portion thereof. This notification must be made a minimum of seven (7) working days prior to the start of construction to allow sufficient time for inspection of the existing traffic signal installation(s) and transfer of maintenance to the Contractor. If work is started prior to an inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The Contractor will become responsible for repairing or replacing all equipment that is not operating properly or is damaged at no cost to the owner of the traffic signal. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted.
- c) Contracts such as pavement grinding or patching which result in the destruction of traffic signal loops do not require maintenance transfer, but require a notification of intent to work and an inspection. A minimum of seven (7) working days prior to the loop removal, the Contractor shall notify the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 and the Department's Electrical Maintenance Contractor, at which time arrangements will be made to adjust the traffic controller timing to compensate for the absence of detection. See additional requirements in these specifications under Inductive Loop Detector.
- d) The Contractor is advised that the existing and/or temporary traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation, which exceeds fifteen (15) minutes, must have prior approval of the Engineer. Approval to shutdown the traffic signal installation will only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.
- e) The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals. Any inquiry, complaint or request by the Department, the Department's Electrical Maintenance Contractor or the public, shall be investigated and repairs begun within one hour. Failure to provide this service will result in liquidated damages of \$500

per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. The District's Electrical Maintenance Contractor may inspect any signaling device on the Department's highway system at any time without notification.

### **TRAFFIC SIGNAL INSPECTION (TURN-ON).**

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

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

When the road is open to traffic, except as otherwise provided in Section 850 of the Standard Specifications, the Contractor may request a turn-on and inspection of the completed traffic signal installation at each separate location. This request must be made to the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 a minimum of seven (7) working days prior to the time of the requested inspection. The Department will not grant a field inspection until notification is provided from the Contractor that the equipment has been field tested and the intersection is operating according to Contract requirements. The Department's facsimile number is (847) 705-4089. The Contractor must invite local fire department personnel to the turn-on when Emergency Vehicle Preemption (EVP) is included in the project. The Contractor must notify the SCAT Consultant of the turn-on schedule, as well as stage changes and phase changes during construction.

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

The Contractor shall provide a representative from the control equipment vendor's office to attend the traffic signal inspection for both permanent and temporary traffic signal turn-ons. Upon demonstration that the signals are operating and all work is completed in accordance with the Contract and to the satisfaction of the Engineer, the Engineer will then allow the signals to be placed in continuous operation. The Agency that is responsible for the maintenance of each traffic signal installation will assume the maintenance upon successful completion of this inspection.

The District requires the following from the Contractor at traffic signal turn-ons.

1. One set of signal plans of record with field revisions marked in red ink.
2. Notification from the Contractor and the equipment vendor of satisfactory field testing.

3. A knowledgeable representative of the controller equipment supplier shall be required at the traffic signal turn-on. The representative shall be knowledgeable of the cabinet design and controller functions.
4. A copy of the approved material letter.
5. One (1) copy of the operation and service manuals of the signal controller and associated control equipment.
6. Five (5) copies 11" x 17" (280 mm X 430 mm) of the cabinet wiring diagrams.
7. The controller manufacturer shall supply a printed form, not to exceed 11" x 17" (280 mm X 430 mm) for recording the traffic signal controller's timings; backup timings; coordination splits, offsets, and cycles; TBC Time of Day, Week and Year Programs; Traffic Responsive Program, Detector Phase Assignment, Type and Detector Switching; and any other functions programmable from the keyboard. The form shall include a location, date, manufacturer's name, controller model and software version. The form shall be approved by the Engineer and a minimum of three (3) copies must be furnished at each turn-on. The manufacturer must provide all programming information used within the controller at the time of turn-on.

Acceptance of the traffic signal equipment by the Department shall be based upon inspection results at the traffic signal "turn on." If approved, traffic signal acceptance shall be verbal at the "turn on" inspection followed by written correspondence from the Engineer. The Contractor shall be responsible for all traffic signal equipment and associated maintenance thereof until Departmental acceptance is granted.

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

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

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

### **LOCATING UNDERGROUND FACILITIES.**

Revise Section 803 to the Standard Specifications to read:

If this Contract requires the services of an Electrical Contractor, the Contractor shall be responsible at his/her own expense for locating existing IDOT electrical facilities prior to performing any work. If this Contract does not require the services of an Electrical Contractor, the Contractor may request one free locate for existing IDOT electrical facilities from the District One Electrical Maintenance Contractor prior to the start of any work. Additional requests may be at the expense of the Contractor. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any facilities damaged during construction at their expense.

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

### **ELECTRIC SERVICE INSTALLATION.**

Revise Section 805 of the Standard Specifications to read:

#### **Description.**

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

#### **General.**

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

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

#### **Materials.**

- a. General. The completed control panel shall be constructed in accordance with UL Std. 508A, Industrial Control Panel, and carry the UL label. Wire terminations shall be UL listed.
- b. Enclosures.
  - a. Pole Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 4X, unfinished single door design, fabricated from minimum 0.080-inch (2.03 mm) thick Type 5052 H-32 aluminum. Seams shall be continuous welded and ground smooth. Stainless steel screws and clamps shall secure the cover and assure a watertight seal. The cover shall be removable by pulling the continuous stainless steel hinge pin. The cabinet shall have an oil-resistant gasket and a lock kit shall be provided with an internal O-ring in the locking mechanism assuring a watertight and dust-tight seal. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 14-inches (350 mm) high, 9-inches (225 mm) wide and 8-inches (200 mm) in depth is required. The cabinet shall be channel mounted to a wooden utility pole using assemblies recommended by the manufacturer.
  - b. Ground Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 3R unfinished single door design with back panel. The cabinet shall be fabricated from Type 5052 H-32 aluminum with the frame and door 0.125-

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

- c. Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 volt load circuit by the means MOV and thermal fusing technology. The response time shall be <math>5n</math> seconds and operate within a range of  $-40C$  to  $+85C$ . The surge protector shall be UL 1449 Listed.
- d. Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 amperes, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V.
- e. Fuses, Fuseholders and Power Indicating Light. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 V AC and shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage. The power indicating light shall be LED type with a green colored lens and shall be energized when electric utility power is present.
- f. Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.
- g. Utility Services Connection. The Contractor shall notify the Utility Company marketing representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Utility Company marketing representative has received service charge payments from the Contractor. Prior to contacting the Utility Company marketing representative for service connection, the service installation controller cabinet and cable must be installed for inspection by the Utility Company.

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

Installation.

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

Basis of Payment.

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

**GROUNDING OF TRAFFIC SIGNAL SYSTEMS.**

General.

All traffic signal systems, equipment and appurtenances shall be properly grounded in strict conformance with the NEC. See IDOT District One Traffic Signal detail plan sheets for additional information.

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

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

- (a) The grounded conductor (neutral conductor) shall be white color coded. This conductor shall be bonded to the equipment grounding conductor only at the Electric Service Installation. All power cables shall include one neutral conductor of the same size.
- (b) The equipment grounding conductor shall be green color coded. The following is in addition to Article 801.04 of the Standard Specifications.

1. Equipment grounding conductors shall be bonded to the grounded conductor (neutral conductor) only at the Electric Service Installation. The equipment grounding conductor is paid for separately and shall be continuous. The Earth shall not be used as the equipment grounding conductor.
  2. Equipment grounding conductors shall be bonded, using a Listed grounding connector, to all traffic signal mast arm poles, traffic signal posts, pedestrian posts, pull boxes, handhole frames and covers and other metallic enclosures throughout the traffic signal wiring system, except where noted herein. Bonding shall be made with a splice and pigtail connection, using a sized compression type copper sleeve, sealant tape, and heat-shrinkable cap. A Listed electrical joint compound shall be applied to all conductors' terminations, connector threads and contact points.
  3. All metallic and non-metallic raceways containing traffic signal circuit runs shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 volts and/or fiber optic cable will not be required to include an equipment grounding conductor.
  4. Individual conductor splices in handholes shall be soldered and sealed with heat shrink. When necessary to maintain effective equipment grounding, a full cable heat shrink shall be provided over individual conductor heat shrinks.
- (c) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, listed pressure connectors, listed clamps or other approved listed means.

### **HANDHOLES.**

Add the following to Section 814 of the Standard Specifications:

All handholes shall be concrete, poured in place, with inside dimensions of 21-1/2 inches (549mm) minimum. Frames and lid openings shall match this dimension. The cover of the handhole frame shall be labeled "Traffic Signals" with legible raised letters.

For grounding purposes the handhole frame shall have provisions for a 7/16 inch (15.875mm) diameter stainless bolt cast into the frame. The covers shall have a stainless steel threaded stint extended from the eye hook assembly for the purpose of attaching the grounding conductor to the handhole cover.

The minimum wall thickness for heavy duty hand holes shall be 12 inches (300mm).

All conduits shall enter the handhole at a depth of 30 inches (760mm) except for the conduits for detector loops when the handhole is less than 5 feet (1.52 m) from the detector loop. All conduit ends should be sealed with a waterproof sealant to prevent the entrance of contaminants into the handhole.

Steel cable hooks shall be coated with hot-dipped galvanization in accordance with AASHTO Specification M111. Hooks shall be a minimum of 1/2 inch (12.7 mm) diameter with two 90 degree bends and extend into the handhole at least 6 inches (150 mm). Hooks shall be placed a minimum of 12 inches (300 mm) below the lid or lower if additional space is required.

### **FIBER OPTIC TRACER CABLE.**

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

Add the following to Article 817.03 of the Standard Specifications:

In order to trace the fiber optic cable after installation, the tracer cable shall be installed in the same conduit as the fiber optic cable in locations shown on the plans. The tracer cable shall be continuous, extended into the controller cabinet and terminated on a barrier type terminal strip mounted on the side wall of the controller cabinet. The barrier type terminal strip and tracer cable shall be clearly marked and identified. The tracer cable will be allowed to be spliced at the handholes only. All tracer cable splices shall be kept to a minimum and shall incorporate maximum lengths of cable supplied by the manufacturer. The tracer cable splice shall use a Western Union Splice soldered with resin core flux. All exposed surfaces of the solder shall be smooth. Splices shall be soldered using a soldering iron. Blow torches or other devices which oxidize copper cable shall not be allowed for soldering operations. The splice shall be covered with WCSMW 30/100 heat shrink tube, minimum length 4 inches (100 mm) and with a minimum 1 inch (25 mm) coverage over the XLP insulation, underwater grade.

Add the following to Article 817.05 of the Standard Specifications:

#### **Basis of Payment.**

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

### **GROUNDING CABLE.**

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

Add to Article 817.02 (b) of the Standard Specifications:

Unless otherwise noted on the Plans, traffic signal grounding conductor shall be one conductor, #6 gauge copper, with a green color coded XLP jacket.

The traffic signal grounding conductor shall be bonded, using a Listed grounding connector (Burndy type KC/K2C, as applicable, or approved equal), to all proposed and existing traffic signal mast arm poles and traffic/pedestrian signal posts, including push button posts. The grounding conductor shall be bonded to all proposed and existing pull boxes, handhole frames and covers and other metallic enclosures throughout the traffic signal wiring system and noted herein and detailed on the plans. Bonding to existing handhole frames and covers shall be paid for separately.

Add the following to Article 817.05 of the Standard Specifications:

Basis of Payment.

Grounding cable shall be measured in place for payment in foot (meter). Payment shall be at the contract unit price for ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6, 1C, which price includes all associated labor and material including grounding clamps, splicing, exothermic welds, grounding connectors, and other hardware.

**RAILROAD INTERCONNECT CABLE.**

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

Add to Article 817.02 of the Standard Specifications:

The railroad interconnect cable shall be three conductor stranded #14 copper cable in a clear polyester binder, shielded with #36 AWG tinned copper braid with 85% coverage, and insulated with .016" polyethylene (black, blue, red). The jacket shall be black 0.045 PVC or polyethylene.

Add the following to Article 817.05 of the Standard Specifications:

Basis of Payment.

This work shall be paid for at the contract unit price per foot (meter) for ELECTRIC CABLE IN CONDUIT, RAILROAD, NO. 14 3C, which price shall be payment in full for furnishing, installing, and making all electrical connections in the traffic signal controller cabinet. Connections in the railroad controller cabinet shall be performed by railroad personnel.

**MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION.**

Revise Section 850 of the Standard Specifications to read:

The energy charges for the operation of the traffic signal installation shall be paid for by others. Full maintenance responsibility shall start as soon as the Contractor begins any physical work on the Contract or any portion thereof.

The Contractor shall have on staff electricians with IMSA Level II certification to provide signal maintenance.

This item shall include maintenance of all traffic signal equipment at the intersection, including emergency vehicle pre-emption equipment, master controllers, uninterruptible power supply (UPS and batteries), telephone service installations, communication cables and conduits to adjacent intersections.

The maintenance shall be according to District One revised Article 801.11 and the following contained herein.

The Contractor shall check all controllers every two (2) weeks, which will include visually inspecting all timing intervals, relays, detectors, and pre-emption equipment to ensure that they

are functioning properly. This item includes, as routine maintenance, all portions of emergency vehicle pre-emption equipment. The Contractor shall maintain in stock at all times a sufficient amount of materials and equipment to provide effective temporary and permanent repairs.

The Contractor shall provide immediate corrective action when any part or parts of the system fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. When repairs at a signalized intersection require that the controller be disconnected, and power is available, the Contractor shall place the traffic signal installation on flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor shall be required to place stop signs (R1-1-36) at each approach of the intersection as a temporary means of regulating traffic. The Contractor shall furnish and equip all their vehicles assigned to the maintenance of traffic signal installations with a sufficient number of stop signs as specified herein. The Contractor shall maintain a sufficient number of spare stop signs in stock at all times to replace stop signs which may be damaged or stolen.

The Contractor shall provide the Engineer with a 24 hour telephone number for the maintenance of the traffic signal installation and for emergency calls by the Engineer.

Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of these Specifications.

The Contractor shall respond to all emergency calls from the Department or others within one hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new and identical equipment. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional charge to the contract. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal installation in proper operating condition or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the State's Electrical Maintenance Contractor perform the maintenance work required. The State's Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The Contractor shall pay this bill within thirty (30) days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor. The Contractor shall allow the Electrical Maintenance Contractor to make reviews of the Existing Traffic Signal Installation that has been transferred to the Contractor for Maintenance.

Basis of Payment.

This work shall be paid for at the contract unit price each for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION.

**TRAFFIC ACTUATED CONTROLLER.**

Add the following to Article 857.02 of the Standard Specifications:

Controllers shall be NEMA TS2 Type 1, Econolite ASC/2S-1000 or Eagle/Siemens M41 unless specified otherwise on the plans or elsewhere on these specifications. Only controllers supplied by one of the District One approved closed loop equipment manufacturers will be allowed. The

controller shall be the most recent model and software version supplied by the manufacturer at the time of the approval. The traffic signal controller shall provide features to inhibit simultaneous display of a circular yellow ball and a yellow arrow display. Individual load switches shall be provided for each vehicle, pedestrian, and right turn over lap phase. The controller shall prevent phases from being skipped during program changes and after all preemption events.

### **MASTER CONTROLLER.**

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

Only controllers supplied by one of the District approved closed loop equipment manufacturers will be allowed. Only NEMA TS 2 Type 1 Eagle/Siemens and Econolite closed loop systems shall be supplied. The latest model and software version of master controller shall be supplied.

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

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

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

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

The approved manufacturer of equipment shall loan the District one master controller and two intersection controllers of the most recent models and the newest software version to be used for instructional purposes in addition to the equipment to be supplied for the Contract.

The Contractor shall arrange to install a standard voice-grade dial-up telephone line to the master controller. This shall be accomplished through the following process utilizing District One staff. This telephone line may be coupled with a DSL line and a phone filter to isolate the dial-up line. An E911 address is required.

The cabinet shall be provided with an Outdoor Network Interface for termination of the telephone service. It shall be mounted to the inside of the cabinet in a location suitable to provide access for termination of the telephone service at a later date.

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

The cabinet shall be equipped with a 9600 baud, auto dial/auto answer modem. It shall be a US robotics 33.6K baud rate or equal.

As soon as practical or within one week after the contract has been awarded, the Contractor shall contact (via phone) the Administrative Support Manager in the District One Business Services Section at (847) 705-4011 to request a phone line installation.

A follow-up fax transmittal to the Administrative Support Manager (847-705-4712) with all required information pertaining to the phone installation is required from the Contractor as soon as possible or within one week after the initial request has been made. A copy of this fax transmittal must also be faxed by the Contractor to the Traffic Signal Systems Engineer at (847) 705-4089. The required information to be supplied on the fax shall include (but not limited to): A street address for the new traffic signal controller (or nearby address); a nearby existing telephone number; what type of telephone service is needed; the name and number of the Contractor's employee for the telephone company to contact regarding site work and questions.

The usual time frame for the activation of the phone line is 4-6 weeks after the Business Services Section has received the Contractor supplied fax. It is, therefore, imperative that the phone line conduit and pull-string be installed by the Contractor in anticipation of this time frame. On jobs which include roadway widening in which the conduit cannot be installed until this widening is completed, the Contractor will be allowed to delay the phone line installation request to the Business Services Section until a point in time that is 4-6 weeks prior to the anticipated completion of the traffic signal work. The contractor shall provide the Administrative Support Manager with an expected installation date considering the 4-6 week processing time.

The telephone line shall be installed and activated one month before the system final inspection.

All costs associated with the telephone line installation and activation (not including the Contract specified conduit installation between the point of telephone service and the traffic signal controller cabinet) shall be paid for by the District One Business Services Section (i.e., this will be an IDOT phone number not a Contractor phone number).

### **FIBER OPTIC CABLE.**

Add the following to Articles 871.01, 872.02, 871.04, and 871.05 of the Standard Specifications:

This work shall consist of furnishing and installing Fiber Optical cable in conduit with all accessories and connectors according to Section 871 of the Standard Specifications. The cable shall be of the type, size, and the number of fiber specified.

The control cabinet distribution enclosure shall be CSC FTWO12KST-W/O 12 Port Fiber Wall Enclosure or an approved equivalent. The fiber optic cable shall provide six fibers per tube for the amount of fibers called for in the Fiber Optic Cable pay item in the Contract. A minimum of

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

Fiber Optic cable may be gel filled or have an approved water blocking tape.

Basis of Payment.

The work shall be paid for at the contract unit price for FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F, per foot (meter) for the cable in place, including distribution enclosure and all connectors.

**CONCRETE FOUNDATIONS.**

Add the following to Article 878.03 of the Standard Specifications:

All anchor bolts shall be according to Article 1006.09, except all anchor bolts shall be hot dipped galvanized the full length of the anchor bolt including the hook.

Concrete Foundations, Type "A" for Traffic Signal Posts shall provide anchor bolts with the bolt pattern specified within the "District One Standard Traffic Signal Design Details." All Type "A" foundations shall be a minimum depth of 48 inches (1.22 m).

Concrete Foundations, Type "C" for Traffic Signal Cabinets with Uninterruptible Power Supply (UPS) cabinet installations shall be a minimum of 48 inches (1.22 m) long and 31 inches (790 mm) wide. All Type "C" foundations shall be a minimum depth of 48 inches (1.22 m). An integral concrete pad to support the UPS cabinet shall be constructed a minimum of 20 inches (510 mm) long and a minimum depth of 10 inches (250 mm). The concrete apron in front of the Type IV or V cabinet shall be 36 in. x 48 in. x 5 in. (910 mm X 1220 mm X 130 mm). The concrete apron in front of the UPS cabinet shall be 36 in. x 31 in. x 5 in. (910 mm X 790 mm X 130 mm). Anchor bolts shall provide bolt spacing as required by the manufacturer.

Concrete Foundations, Type "D" for Traffic Signal Cabinets shall be a minimum of 48 inches (1.22 m) long and 31 inches (790 mm) wide. All Type "D" foundations shall be a minimum depth of 48 inches (1.22 m). The concrete apron shall be 36 in. x 48 in. x 5 in. (910 mm X 1220 mm X 130 mm). Anchor bolts shall provide bolt spacing as required by the manufacturer.

Concrete Foundations, Type "E" for Mast Arm and Combination Mast Arm Poles shall meet the following requirements:

Table 1  
 DESIGN TABLE FOR MAST ARM FOUNDATIONS

MAST ARM LENGTH	FOUNDATION DEPTH*	FOUNDATION DIAMETER	SPIRAL DIAMETER	QUANTITY OF NO. 15 (NO. 5) BARS
Less than 9.1m (30')	10'-0" (3.0m)	30" (750mm)	24" (600mm)	8
Greater than or equal to 9.1m (30') and less than 12.2m (40')	13'-6" (4.1m)	30" (750mm)	24" (600mm)	8
	11'-0" (3.4m)	36" (900mm)	30" (750mm)	12
Greater than or equal to 12.2m (40') and less than 15.2m (50')	13'-0" (4.0m)	36" (900mm)	30" (750mm)	12
Greater than or equal to 15.2m (50') and up to 16.8m (55')	15'-0" (4.6m)	36" (900mm)	30" (750mm)	12

Foundation depths specified are for sites which have cohesive soils (clayey, silt, sandy clay, etc.) along the length of the shaft, with an average Unconfined Compressive strength of (Qu)>1.0 tsf (100kPa). This strength shall be verified by boring data prior to construction or with testing by the Engineer during foundation drilling. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.

Concrete Foundations, Type "E" for Combination Mast Arm Poles shall be 36 inch (900 mm) diameter, regardless of mast arm length. Foundations used for Combination Mast Arm Poles shall provide an extra 2-1/2 inch (65 mm) raceway.

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

**DETECTOR LOOP.**

Revise Section 886 of the Standard Specifications to read:

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

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

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

Each loop detector lead-in wire shall be labeled in the handhole using a Panduit 250W175C water proof tag, or an approved equal, secured to each wire with nylon ties.

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

- (a) Type I. All loops installed in new asphalt pavement shall be installed in the binder course and not in the surface course. The edge of pavement, curb and handhole shall be cut with a 1/4 inch (6.3 mm) deep x 4 inches (100 mm) saw cut to mark location of each loop lead-in.

Loop sealant shall be a two-component thixotropic chemically cured polyurethane either Chemque Q-Seal 295, Percol Elastic Cement A/C Grade or an approved equal. The sealant shall be installed 1/8 inch (3 mm) below the pavement surface, if installed above the surface the overlap shall be removed immediately.

Detector loop measurements shall include the saw cut and the length of the loop lead-in to the edge of pavement. The lead-in wire, including all necessary connections for proper operations, from the edge of pavement to the handhole, shall be included in the price of the detector loop. Unit duct, trench and backfill, and drilling of pavement or handholes shall be included in detector loop quantities.

- (b) Preformed. This work shall consist of furnishing and installing a rubberized heat resistant preformed traffic signal loop in accordance with the Standard Specifications, except for the following:

Preformed detector loops shall be installed in new pavement constructed of Portland cement concrete using mounting chairs or tied to re-bar or the preformed detector loops may be placed in the sub-base. Loop lead-ins shall be extended to a temporary enclosure near the proposed handhole location with ends capped and sealed against moisture and other contaminants.

Handholes shall be placed next to the shoulder or back of curb when preformed detector loops enter the handhole. Non-metallic coilable duct, included in this pay item, shall be used to protect the preformed lead-ins from back of curb to the handhole.

Preformed detector loops shall be factory assembled. Homeruns and interconnects shall be pre-wired and shall be an integral part of the loop assembly. The loop configurations and homerun lengths shall be assembled for the specific application. The loop and homerun shall be constructed using 11/16 inch (17.2 mm) outside diameter (minimum), 3/8 inch (9.5 mm) inside diameter (minimum) Class A oil resistant synthetic cord reinforced hydraulic hose with 250 psi (1,720 kPa) internal pressure rating. Hose for the loop and homerun assembly shall be one continuous piece. No joints or splices shall be allowed in the hose except where necessary to

connect homeruns or interconnects to the loops. This will provide maximum wire protection and loop system strength. Hose tee connections shall be heavy duty high temperature synthetic rubber. The tee shall be of proper size to attach directly to the hose, minimizing glue joints. The tee shall have the same flexible properties as the hose to insure that the whole assembly can conform to pavement movement and shifting without cracking or breaking. The wire used shall be #16 THWN stranded copper. The number of turns in the loop shall be application specific. Homerun wire pairs shall be twisted a minimum of four turns per foot. No wire splices will be allowed in the preformed loop assembly. The loop and homeruns shall be filled and sealed with a flexible sealant to insure complete moisture blockage and further protect the wire. The preformed loops shall be constructed to allow a minimum of 6.5 feet of extra cable in the handhole.

**Basis of Payment.**

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

**EMERGENCY VEHICLE PRIORITY SYSTEM.**

Revise Section 887 of the Standard Specifications to read:

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

All new installations shall be equipped with Confirmation Beacons as shown on the "District One Standard Traffic Signal Design Details." The Confirmation Beacon shall consist of a 6 watt Par 38 LED flood lamp with a 30 degree light spread, maximum 6 watt energy consumption at 120V, and a 2,000 hour warranty for each direction of pre-emption. The lamp shall have an adjustable mount with a weatherproof enclosure for cable splicing. All hardware shall be cast aluminum or stainless steel. Holes drilled into signal poles, mast arms, or posts shall require rubber grommets. In order to maintain uniformity between communities, the confirmation beacons shall indicate when the control equipment receives the pre-emption signal. The pre-emption movement shall be signalized by a flashing indication at the rate specified by Section 4D-11 of the "Manual on Uniform Traffic Control Devices." The stopped pre-empted movements shall be signalized by a continuous indication.

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

**Basis of Payment.**

The work shall be paid for at the contract unit price each for furnishing and installing LIGHT DETECTOR and LIGHT DETECTOR AMPLIFIER. Furnishing and installing the confirmation

beacon shall be included in the cost of the Light Detector. The preemption detector amplifier shall be paid for on a basis of (1) one each per intersection controller and shall provide operation for all movements required in the pre-emption phase sequence.

### **RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM.**

#### **Description.**

This work shall consist of re-optimizing a closed loop traffic signal system according to the following Levels of work.

LEVEL I applies when improvements are made to an existing signalized intersection within an existing closed loop traffic signal system. The purpose of this work is to integrate the improvements to the subject intersection into the signal system while minimizing the impacts to the existing system operation. This type of work would be commonly associated with the addition of signal phases, pedestrian phases, or improvements that do not affect the capacity at an intersection.

LEVEL II applies when improvements are made to an existing signalized intersection within an existing closed loop traffic signal system and detailed analysis of the intersection operation is desired by the engineer, or when a new signalized or existing signalized intersection is being added to an existing system, but optimization of the entire system is not required. The purpose of this work is to optimize the subject intersection, while integrating it into the existing signal system with limited impact to the system operations. This item also includes an evaluation of the overall system operation, including the traffic responsive program.

For the purposes of re-optimization work, an intersection shall include all traffic movements operated by the subject controller and cabinet.

After the signal improvements are completed, the signal shall be re-optimized as specified by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants. Traffic signal system optimization work, including fine-tuning adjustments of the optimized system, shall follow the requirements stated in the most recent IDOT District 1 SCAT Guidelines, except as note herein.

A listing of existing signal equipment, interconnect information, phasing data, and timing patterns may be obtained from the Department, if available and as appropriate. The existing SCAT Report is available for review at the District One office and if the Consultant provides blank computer disks, copies of computer simulation files for the existing optimized system and a timing database that includes intersection displays will be made for the Consultant. The Consultant shall confer with the Traffic Signal Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system, in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the optimization.

(a) LEVEL I Re-Optimization

1. The following tasks are associated with LEVEL I Re-Optimization.
  - a. Appropriate signal timings shall be developed for the subject intersection and existing timings shall be utilized for the rest of the intersections in the system.
  - b. Proposed signal timing plan for the new or modified intersection(s) shall be forwarded to IDOT for review prior to implementation.
  - c. Consultant shall conduct on-site implementation of the timings at the turn-on and make fine-tuning adjustments to the timings of the subject intersection in the field to alleviate observed adverse operating conditions and to enhance operations.
2. The following deliverables shall be provided for LEVEL I Re-Optimization.
  - a. Consultant shall furnish to IDOT a cover letter describing the extent of the re-optimization work performed.
  - b. Consultant shall furnish an updated intersection graphic display for the subject intersection to IDOT and to IDOT's Traffic Signal Maintenance Contractor.

(b) LEVEL II Re-Optimization

1. In addition to the requirements described in the LEVEL I Re-Optimization above, the following tasks are associated with LEVEL II Re-Optimization.
  - a. Traffic counts shall be taken at the subject intersection after the traffic signals are approved for operation by the Area Traffic Signal Operations Engineer. Manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m., and 3:30 p.m. to 6:30 p.m. on a typical weekday from midday Monday to midday Friday. The turning movement counts shall identify cars, and single-unit, multi-unit heavy vehicles, and transit buses.
  - b. As necessary, the intersections shall be re-addressed and all system detectors reassigned in the master controller according to the current standard of District One.
  - c. Traffic responsive program operation shall be evaluated to verify proper pattern selection and lack of oscillation and a report of the operation shall be provided to IDOT.
2. The following deliverables shall be provided for LEVEL II Re-Optimization.
  - a. Consultant shall furnish to IDOT one (1) copy of a technical memorandum for the optimized system. The technical memorandum shall include the following elements:
    - (1) Brief description of the project
    - (2) Printed copies of the analysis output from Synchro (or other appropriate, approved optimization software file)
    - (3) Printed copies of the traffic counts conducted at the subject intersection
  - b. Consultant shall furnish to IDOT two (2) CDs for the optimized system. The CDs shall include the following elements:
    - (1) Electronic copy of the technical memorandum in PDF format
    - (2) Revised Synchro files (or other appropriate, approved optimization software file) including the new signal and the rest of the signals in the closed loop system
    - (3) Traffic counts conducted at the subject intersection
    - (4) New or updated intersection graphic display file for the subject intersection

- (5) The CD shall be labeled with the IDOT system number and master location, as well as the submittal date and the consultant logo. The CD case shall include a clearly readable label displaying the same information securely affixed to the side and front.

Basis of Payment.

This work shall be paid for at the contract unit price each for RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM – LEVEL I or RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM – LEVEL II, which price shall be payment in full for performing all work described herein per intersection. Following completion of the timings and submittal of specified deliverables, 100 percent of the bid price will be paid.

**OPTIMIZE TRAFFIC SIGNAL SYSTEM.**

Description.

This work shall consist of optimizing a closed loop traffic signal system.

OPTIMIZE TRAFFIC SIGNAL SYSTEM applies when a new or existing closed loop traffic signal system is to be optimized and a formal Signal Coordination and Timing (SCAT) Report is to be prepared. The purpose of this work is to improve system performance by optimizing traffic signal timings, developing a time of day program and a traffic responsive program.

After the signal improvements are completed, the signal system shall be optimized as specified by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants. Traffic signal system optimization work, including fine-tuning adjustments of the optimized system, shall follow the requirements stated in the most recent IDOT District 1 SCAT Guidelines, except as note herein.

A listing of existing signal equipment, interconnect information, phasing data, and timing patterns may be obtained from the Department, if available and as appropriate. The existing SCAT Report is available for review at the District One office and if the Consultant provides blank computer disks, copies of computer simulation files for the existing optimized system and a timing database that includes intersection displays will be made for the Consultant. The Consultant shall confer with the Traffic Signal Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system, in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the optimization.

(a) The following tasks are associated with OPTIMIZE TRAFFIC SIGNAL SYSTEM.

1. Appropriate signal timings and offsets shall be developed for each intersection and appropriate cycle lengths shall be developed for the closed loop signal system.
2. Traffic counts shall be taken at all intersections after the permanent traffic signals are approved for operation by the Area Traffic Signal Operations Engineer. Manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m., and 3:30 p.m. to 6:30 p.m. on a typical weekday from midday Monday to midday Friday. The turning movement counts shall identify cars, and single-unit and multi-unit heavy vehicles.

3. As necessary, the intersections shall be re-addressed and all system detectors reassigned in the master controller according to the current standard of District One.
  4. A traffic responsive program shall be developed, which considers both volume and occupancy. A time-of-day program shall be developed for used as a back-up system.
  5. Proposed signal timing plan for the new or modified intersection shall be forwarded to IDOT for review prior to implementation.
  6. Consultant shall conduct on-site implementation of the timings and make fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
  7. Speed and delay studies shall be conducted during each of the count periods along the system corridor in the field before and after implementation of the proposed timing plans for comparative evaluations. These studies should utilize specialized electronic timing and measuring devices.
- (b) The following deliverables shall be provided for OPTIMIZE TRAFFIC SIGNAL SYSTEM.
1. Consultant shall furnish to IDOT one (1) copy of a SCAT Report for the optimized system. The SCAT Report shall include the following elements:

Cover Page in color showing a System Map
Figures <ol style="list-style-type: none"> <li>1. <b>System overview map – showing system number, system schematic map with numbered system detectors, oversaturated movements, master location, system phone number, cycle lengths, and date of completion.</b></li> <li>2. <b>General location map in color – showing signal system location in the metropolitan area.</b></li> <li>3. <b>Detail system location map in color – showing cross street names and local controller addresses.</b></li> <li>4. <b>Controller sequence – showing controller phase sequence diagrams.</b></li> </ol>
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Tab 1: Final Report <ol style="list-style-type: none"> <li>1. <b>Project Overview</b></li> <li>2. <b>System and Location Description (Project specific)</b></li> <li>3. <b>Methodology</b></li> <li>4. <b>Data Collection</b></li> <li>5. <b>Data Analysis and Timing Plan Development</b></li> <li>6. <b>Implementation</b> <ol style="list-style-type: none"> <li>a. <b>Traffic Responsive Programming (Table of TRP vs. TOD Operation)</b></li> </ol> </li> <li>7. <b>Evaluation</b> <ol style="list-style-type: none"> <li>a. <b>Speed and Delay runs</b></li> </ol> </li> </ol>

<p>Tab 2. Turning Movement Counts</p> <ol style="list-style-type: none"> <li><b>1. Turning Movement Counts (Showing turning movement counts in the intersection diagram for each period, including truck percentage)</b></li> </ol>
<p>Tab 3. Synchro Analysis</p> <ol style="list-style-type: none"> <li><b>1. AM: Time-Space diagram in color, followed by intersection Synchro report (Timing report) summarizing the implemented timings.</b></li> <li><b>2. Midday: same as AM</b></li> <li><b>3. PM: same as AM</b></li> </ol>
<p>Tab 4: Speed and Delay Studies</p> <ol style="list-style-type: none"> <li><b>1. Summary of before and after runs results in two (2) tables showing travel time and delay time.</b></li> <li><b>2. Plot of the before and after runs diagram for each direction and time period.</b></li> </ol>
<p>Tab 5: Electronic Files</p> <ol style="list-style-type: none"> <li><b>1. Two (2) CDs for the optimized system. The CDs shall include the following elements:</b> <ol style="list-style-type: none"> <li><b>a. Electronic copy of the SCAT Report in PDF format</b></li> <li><b>b. Copies of the Synchro files for the optimized system</b></li> <li><b>c. Traffic counts for the optimized system</b></li> <li><b>d. New or updated intersection graphic display files for each of the system intersections and the system graphic display file including system detector locations and addresses.</b></li> </ol> </li> </ol>

Basis of Payment.

The work shall be paid for at the contract unit each for OPTIMIZE TRAFFIC SIGNAL SYSTEM, which price shall be payment in full for performing all work described herein for the entire traffic signal system. Following the completion of traffic counts, 25 percent of the bid price will be paid. Following the completion of the Synchro analysis, 25 percent of the bid price will be paid. Following the setup and fine tuning of the timings, the speed-delay study, and the TRP programming, 25 percent of the bid price will be paid. The remaining 25 percent will be paid when the system is working to the satisfaction of the engineer and the report and CD have been submitted.

**TEMPORARY TRAFFIC SIGNAL TIMINGS**

Description.

This work shall consist of developing and maintaining appropriate traffic signal timings for the specified intersection for the duration of the temporary signalized condition.

All timings and adjustments necessary for this work shall be performed by an approved Consultant who has previous experience in optimizing Closed Loop Traffic signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants.

The following tasks are associated with TEMPORARY TRAFFIC SIGNAL TIMINGS.

- (a) Consultant shall attend temporary traffic signal inspection (turn-on) and conduct on-site implementation of the traffic signal timings. Make fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.

- (b) Consultant shall provide monthly observation of traffic signal operations in the field.
- (c) Consultant shall provide on-site consultation and adjust timings as necessary for construction stage changes, temporary traffic signal phase changes, and any other conditions affecting timing and phasing, including lane closures, detours, and other construction activities.
- (d) Consultant shall make timing adjustments and prepare comment responses as directed by the Area Traffic Signal Operations Engineer.

**Basis of Payment.**

The work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL TIMINGS, which price shall be payment in full for performing all work described herein per intersection. When the temporary traffic signal installation is turned on, 50 percent of the bid price will be paid. The remaining 50 percent of the bid price will be paid following the removal of the temporary traffic signal installation.

**TEMPORARY TRAFFIC SIGNAL INSTALLATION.**

Revise Section 890 of the Standard Specifications to read:

**General.**

Only an approved equipment vendor will be allowed to assemble the temporary traffic signal cabinet. Also, an approved equipment vendor shall assemble and test a temporary railroad traffic signal cabinet. (Refer to the "Inspection of Controller and Cabinet" specification). A representative of the approved control equipment vendor shall be present at the temporary traffic signal turn-on inspection.

**Construction Requirements.**

- (a) Controllers.
  - 1. Only controllers supplied by one of the District approved closed loop equipment manufacturers will be approved for use at temporary signal locations. All controllers used for temporary traffic signals shall be fully actuated NEMA microprocessor based with RS232 data entry ports compatible with existing monitoring software approved by IDOT District 1, installed in NEMA TS1 or TS2 cabinets with 8 phase back panels, capable of supplying 255 seconds of cycle length and individual phase length settings up to 99 seconds. On projects with one lane open and two way traffic flow, such as bridge deck repairs, the temporary signal controller shall be capable of providing an adjustable all red clearance setting of up to 30 seconds in length. All controllers used for temporary traffic signals shall meet or exceed the requirements of Section 857 of the Standard Specifications with regards to internal time base coordination and preemption.
  - 2. All control equipment for the temporary traffic signal(s) shall be furnished by the Contractor unless otherwise stated in the plans. On projects with multiple temporary traffic signal installations, all controllers shall be the same manufacturer brand and model number with current software installed.

- (b) Cabinets. All temporary traffic signal cabinets shall have a closed bottom made of aluminum alloy. The bottom shall be sealed along the entire perimeter of the cabinet base to ensure a water, dust and insect-proof seal. The bottom shall provide a minimum of two (2) 4 inch (100 mm) diameter holes to run the electric cables through. The 4 inch (100 mm) diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.
- (c) Grounding. Grounding shall be provided for the temporary traffic signal cabinet meeting or exceeding the applicable portions of the National Electrical Code, Section 807 of the Standard Specifications and shall meet the requirements of the District 1 Traffic Signal Specifications for "Grounding of Traffic Signal Systems".
- (d) Traffic Signal Heads. All traffic signal sections and pedestrian signal sections shall be 12 inches (300 mm). Traffic signal sections shall be LED with expandable view, unless otherwise approved by the Engineer. The temporary traffic signal heads shall be placed as indicated on the temporary traffic signal plan or as directed by the Engineer. The Contractor shall furnish enough extra cable length to relocate heads to any position on the span wire or at locations illustrated on the plans for construction staging. The temporary traffic signal shall remain in operation during all signal head relocations. Each temporary traffic signal head shall have its own cable from the controller cabinet to the signal head.
- (e) Interconnect.
1. Temporary traffic signal interconnect shall be provided using fiber optic cable or wireless interconnect technology as specified in the plans. The Contractor may request, in writing, to substitute the fiber optic temporary interconnect indicated in the contract documents with a wireless interconnect. The Contractor must provide assurances that the radio device will operate properly at all times and during all construction staging. If approved for use by the Engineer, the Contractor shall submit marked-up traffic signal plans indicating locations of radios and antennas and installation details. If wireless interconnect is used, and in the opinion of the engineer, it is not viable, or if it fails during testing or operations, the Contractor shall be responsible for installing all necessary poles, fiber optic cable, and other infrastructure for providing temporary fiber optic interconnect at no cost to the contract.
  2. The existing system interconnect and phone lines are to be maintained as part of the Temporary Traffic Signal Installation specified for on the plan. The interconnect shall be installed into the temporary controller cabinet as per the notes or details on the plans. All labor and equipment required to install and maintain the existing interconnect as part of the Temporary Traffic Signal Installation shall be included in the item Temporary Traffic Signal Installation. When shown in the plans, temporary traffic signal interconnect equipment shall be furnished and installed. The temporary traffic signal interconnect shall maintain interconnect communications throughout the entire signal system for the duration of the project.

3. Temporary wireless interconnect, compete. The radio interconnect system shall be compatible with Eagle or Econolite controller closed loop systems. This item shall include all materials, labor and testing to provide the completely operational closed loop system as shown on the plans. The radio interconnect system shall include the following components:
  - a. Rack or Shelf Mounted RS-232 Frequency Hopping Spread Spectrum (FHSS) Radio
  - b. Software for Radio Configuration (Configure Frequency and Hopping Patterns)
  - c. Antennas (Omni Directional or Yagi Directional)
  - d. Antenna Cables, LMR400, Low Loss. Max. 100-ft from controller cabinet to antenna
  - e. Brackets, Mounting Hardware, and Accessories Required for Installation
  - f. RS232 Data Cable for Connection from the radio to the local or master controller
  - g. All other components required for a fully functional radio interconnect system

All controller cabinet modifications and other modifications to existing equipment that are required for the installation of the radio interconnect system components shall be included in this item.

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

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

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

The following radio equipment is currently approved for use in Region One/District One: Encon Model 5100 and Intuicom Communicator II.

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

- District. All labor and material required to install and maintain the Emergency Vehicle Preemption installation shall be included in the item Temporary Traffic Signal Installation.
- (g) Vehicle Detection. All temporary traffic signal installations shall have vehicular detection installed as shown on the plans or as directed by the Engineer. Pedestrian push buttons shall be provided for all pedestrian signal heads/phases as shown on the plans or as directed by the Engineer. All approaches shall have vehicular detection provided by Video Vehicle Detection System as shown on the plans or as directed by the Engineer. The microwave vehicle sensor or video vehicle detection system shall be approved by IDOT before furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the microwave vehicle sensor or video vehicle detection system in accordance to the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the microwave vehicle sensor or video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project. A representative of the approved control equipment vendor shall be present and assist the contractor in setting up and maintaining the microwave vehicle sensor or video vehicle detection system. An in-cabinet video monitor shall be provided with all video vehicle detection systems and shall be included in the item Temporary Traffic Signal Installation.
- (h) Signs. All existing street name and intersection regulatory signs shall be removed from existing poles and relocated to the temporary signal span wire. If new mast arm assembly and pole(s) and posts are specified for the permanent signals, the signs shall be relocated to the new equipment at no extra cost.
- (i) Energy Charges. The electrical utility energy charges for the operation of the traffic signal installation shall be paid for by others if the installation replaces an existing signal. Otherwise charges shall be paid for under 109.05 of the Standard Specifications.
- (j) Maintenance. Maintenance shall meet the requirements of the Traffic Specifications and District Specifications for "Maintenance of Existing Traffic Signal Installation." Maintenance of temporary signals and of the existing signals shall be included to the cost of this item. When temporary traffic signals are to be installed at locations where existing signals are presently operating, the Contractor shall be fully responsible for the maintenance of the existing signal installation as soon as he begins any physical work on the Contract or any portion thereof. Maintenance responsibility of the existing signals shall be included to the item Temporary Traffic Signal Installation(s). In addition, a minimum of seven (7) days prior to assuming maintenance of the existing traffic signal installation(s) under this Contract, the Contractor shall request that the Resident Engineer contact the Bureau of Traffic (847) 705-4424 for an inspection of the installation(s).
- (k) Temporary Traffic Signals for Bridge Projects. Temporary Traffic Signals for bridge projects shall follow the State Standards, Standard Specifications, District 1 Traffic Signal Specifications and any plans for Bridge Temporary Traffic Signals included in

the plans. The installation shall meet the above requirements for "Temporary Traffic Signal Installation". In addition all electric cable shall be aerially suspended, at a minimum height of 18 feet (5.5m), on temporary wood poles (Class 5 or better) of 45 feet (13.7 m), minimum height. The signal heads shall be span wire mounted or bracket mounted to the wood pole or as directed by the Engineer. The Controller cabinet shall be mounted to the wood pole or as directed by the Engineer. Microwave vehicle sensors or video vehicle detection may be used in place of the detector loops as approved by the Engineer.

(I) Temporary Portable Traffic Signal for Bridge Projects.

1. Unless otherwise directed by the Engineer, temporary portable traffic signals shall be restricted to use on roadways of less than 8000 ADT that have limited access to electric utility service, shall not be installed on projects where the estimated need exceeds ten (10) weeks, and shall not be in operation during the period of November through March. The Contractor shall replace the temporary portable traffic signals with temporary span wire traffic signals noted herein at no cost to the contract if the bridge project or Engineer requires temporary traffic signals to remain in operation into any part of period of November through March. If, in the opinion of the engineer, the reliability and safety of the temporary portable traffic signal is not similar to that of a temporary span wire traffic signal installation, the Contractor shall replace the temporary portable traffic signals with temporary span wire traffic signals noted herein at no cost to the contract.
2. The controller and LED signal displays shall meet the above requirements for "Temporary Traffic Signal Installation".
3. Work shall be according to Article 701.18(b) of the Standard Specifications except as noted herein.
4. General.
  - a. The temporary portable bridge traffic signals shall be trailer-mounted units. The trailer-mounted units shall be set up securely and level. Each unit shall be self-contained and consist of two signal heads. The left signal head shall be mounted on a mast arm capable of extending over the travel lane. Each unit shall contain a solar cell system to facilitate battery charging. There shall be a minimum of 12 days backup reserve battery supply and the units shall be capable of operating with a 120 V power supply from a generator or electrical service.
  - b. All signal heads located over the travel lane shall be mounted at a minimum height of 17 feet (5m) from the bottom of the signal back plate to the top of the road surface. All far right signal heads located outside the travel lane shall be mounted at a minimum height of 8 feet (2.5m) from the bottom of the signal back plate to the top of the adjacent travel lane surface.

- c. The long all red intervals for the traffic signal controller shall be adjustable up to 250 seconds in one-second increments.
- d. As an alternative to detector loops, temporary portable bridge traffic signals may be equipped with microwave sensors or other approved methods of vehicle detection and traffic actuation.
- e. All portable traffic signal units shall be interconnected using hardwire communication cable. Radio communication equipment may be used only with the approval of the Engineer. If radio communication is used, a site analysis shall be completed to ensure that there is no interference present that would affect the traffic signal operation. The radio equipment shall meet all applicable FCC requirements.
- f. The temporary portable bridge traffic signal system shall meet the physical display and operational requirements of conventional traffic signals as specified in Part IV of the Manual on Uniform Traffic Control Devices (MUTCD). The signal system shall be designed to continuously operate over an ambient temperature range between -30 °F (-34 °C) and 120 °F (48 °C). When not being utilized to inform and direct traffic, portable signals shall be treated as nonoperating equipment according to Article 701.11.
- g. Basis of Payment. This work will be paid for according to Article 701.20(c).

Basis of Payment.

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

**REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT.**

Add the following to Article 895.05 of the Standard Specifications:

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

All equipment to be returned to the State shall be delivered by the Contractor to the State's Traffic Signal Maintenance Contractor's main facility. The Contractor shall contact the State's Electrical Maintenance Contractor to schedule an appointment to deliver the equipment. No equipment will be accepted without a prior appointment. All equipment shall be delivered within 30 days of removing it from the traffic signal installation. The Contractor shall provide 5 copies of a list of equipment that is to remain the property of the State, including model and serial numbers, where applicable. He shall also provide a copy of the Contract plan or special

provision showing the quantities and type of equipment. Controllers and peripheral equipment from the same location shall be boxed together (equipment from different locations may not be mixed) and all boxes and controller cabinets shall be clearly marked or labeled with the location from which they were removed. If equipment is not returned with these requirements, it will be rejected by the State's Electrical Maintenance Contractor. The Contractor shall be responsible for the condition of the traffic signal equipment from the time he takes maintenance of the signal installation until the acceptance of a receipt drawn by the State's Electrical Maintenance Contractor indicating the items have been returned in good condition.

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

Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of these Specifications.

### **TRAFFIC SIGNAL PAINTING.**

#### **Description.**

This work shall include surface preparation, powder type painted finish application and packaging of new galvanized steel traffic signal mast arm poles and posts assemblies. All work associated with applying the painted finish shall be performed at the manufacturing facility for the pole assembly or post or at a painting facility approved by the Engineer. Traffic signal mast arm shrouds and post bases shall also be painted the same color as the pole assemblies and posts.

#### **Surface Preparation.**

All weld flux and other contaminates shall be mechanically removed. The traffic mast arms and post assemblies shall be degreased, cleaned, and air dried to assure all moisture is removed.

#### **Painted Finish.**

All galvanized exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a dry film thickness of 2.0 mils. Prior to application, the surface shall be mechanically etched by brush blasting (Ref. SSPC-SP7) and the zinc coated substrate preheated to 450 degrees F for a minimum one (1) hour. The coating shall be electrostatically applied and cured by elevating the zinc-coated substrate temperature to a minimum of 400 degrees F.

The finish paint color shall be one of the manufacturer's standard colors and shall be as selected by the local agency responsible for paint costs. The Contractor shall confirm, in writing, the color selection with the local responsible agency and provide a copy of the approval to the Engineer and a copy of the approval shall be included in the material catalog submittal.

Traffic signal heads, pedestrian signal heads and controller cabinets are not included in this pay item.

Any damage to the finish after leaving the manufacturer's facility shall be repaired to the satisfaction of the Engineer using a method approvable by the Engineer and manufacturer. If while at the manufacturer's facility the finish is damaged, the finish shall be re-applied.

Warranty.

The Contractor shall furnish in writing to the Engineer, the paint manufacturer's standard warranty and certification that the paint system has been properly applied.

Packaging.

Prior to shipping, the poles and posts shall be wrapped in ultraviolet-inhibiting plastic foam or rubberized foam.

Basis of Payment.

This work shall be paid for at the contract unit price each for PAINT NEW MAST ARM POLE, UNDER 40 FEET (12.19 METER); PAINT NEW MAST ARM POLE, 40 FEET (12.19 METER) AND OVER; PAINT NEW COMBINATION MAST ARM POLE, UNDER 40 FEET (12.19 METER); PAINT NEW COMBINATION MAST ARM POLE, 40 FEET (12.19 METER) AND OVER; or TRAFFIC SIGNAL POST of any height, which shall be payment in full for painting and packaging the traffic signal mast arm poles and posts described above including all shrouds, bases and appurtenances.

**DIVISION 1000 MATERIALS**

**PEDESTRIAN PUSH-BUTTON.**

Revise Article 1074.02 of the Standard Specifications to read:

- (a) General. Push-button assemblies shall be ADA compliant, highly vandal resistant, be pressure activated with minimal movement and cannot be stuck in a closed or constant call position. A red LED and audible tone shall be provided for confirmation of an actuation call.
- (b) Housing. The push-button housing shall be solid 6061 aluminum and powder coated yellow, unless otherwise noted on the plans.
- (c) Actuator. The actuator shall be stainless steel with a solid state electronic Piezo switch rated for a minimum of 20 million cycles with no moving plunger or moving electrical contacts. The operating voltage shall be 12-24 V AC/DC.
- (d) Pedestrian Station. Stations shall be designed to be mounted directly to a post, mast arm pole or wood pole. The station shall be aluminum and accept a 3-inch round push button assembly and 5 X 7 ¾ -inch R10-3b or R10-3d sign. A larger station will be necessary to accommodate the sign, R10-3e, for a count-down pedestrian signal.

**CONTROLLER CABINET AND PERIPHERAL EQUIPMENT.**

Add the following to Article 1074.03 of the Standard Specifications:

- (a) Cabinets shall be designed for NEMA TS2 Type 1 operation. All cabinets shall be pre-wired for a minimum of eight (8) phases of vehicular, four (4) phases of pedestrian and four (4) phases of overlap operation.
- (b)(5) Cabinets – Provide 1/8" (3.2 mm) thick unpainted aluminum alloy 5052-H32. The surface shall be smooth, free of marks and scratches. All external hardware shall be stainless steel.

- (b) (6) Controller Harness – Provide a TS2 Type 2 “A” wired harness in addition to the TS2 Type 1 harness.
- (b) (7) Surge Protection – EDCO Model 1210 IRS with failure indicator.
- (b) (8) BIU – Containment screw required.
- (b) (9) Transfer Relays – Solid state or mechanical flash relays are acceptable.
- (b) (10) Switch Guards – All switches shall be guarded.
- (b) (11) Heating – Two (2) porcelain light receptacles with cage protection controlled by both a wall switch and a thermostat or a thermostatically controlled 150 watt strip heater.
- (b) (12) Plan & Wiring Diagrams – 12” x 16” (3.05mm x 4.06mm) moisture sealed container attached to door.
- (b) (13) Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle pre-emption and sixteen channels (16) of vehicular operation.
- (b) (14) Field Wiring Labels – All field wiring shall be labeled.
- (b) (15) Field Wiring Termination – Approved channel lugs required.
- (b) (16) Power Panel – Provide a nonconductive shield.
- (b) (17) Circuit Breaker – The circuit breaker shall be sized for the proposed load but shall not be rated less than 30 amps.
- (b) (18) Police Door – Provide wiring and termination for plug in manual phase advance switch.
- (b) (19) Railroad Pre-Emption Test Switch – Eaton 8830K13 SHA 1250 or equivalent.

#### **RAILROAD, FULL-ACTUATED CONTROLLER AND CABINET.**

Add the following to Article 857.02 of the Standard Specifications:

Controller shall comply with Article 1073.01 as amended in these Traffic Signal Special Provisions.

Controller Cabinet and Peripheral Equipment shall comply with Article 1074.03 as amended in these Traffic Signal Special Provisions.

Add the following to Articles 1073.01 (c) (2) and 1074.03 (a) (5) (e) of the Standard Specifications:

Controllers and cabinets shall be new and NEMA TS2 Type 1 design.

A method of monitoring and/or providing redundancy to the railroad preemptor input to the controller shall be included as a component of the Railroad, Full Actuated Controller and Cabinet installation and be verified by the traffic signal equipment supplier prior to installation.

Railroad interconnected controllers and cabinets shall be assembled only by an approved traffic signal equipment supplier. The equipment shall be tested and approved in the equipment supplier’s District One facility prior to field installation.

#### **ELECTRIC CABLE.**

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

### **MAST ARM ASSEMBLY AND POLE.**

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

Traffic signal mast arms shall be one piece construction, unless otherwise approved by the Engineer. All poles shall be galvanized. If the Department approves painting, powder coating by the manufacturer will be required over the galvanization.

This work shall consist of furnishing and installing a galvanized steel or extruded aluminum shroud for protection of the mast arm pole base plate similar to the dimensions detailed in the "District One Standard Traffic Signal Design Details." The shroud shall be of sufficient strength to deter pedestrian and vehicular damage. The shroud shall allow air to circulate throughout the mast arm but not allow infestation of insects or other animals. The shroud shall be constructed, installed and designed not to be hazardous to probing fingers and feet. All mounting hardware shall be stainless steel. The shroud shall not be paid for separately but shall be included in the cost of the mast arm assembly and pole.

### **TRAFFIC SIGNAL POST.**

Add the following to Article 1077.01 (b) of the Standard Specifications:

All posts and bases shall be steel and hot dipped galvanized. If the Department approves painting, powder coating by the manufacturer will be required over the galvanization.

### **SIGNAL HEADS.**

Add the following to Section 1078 of the Standard Specifications to read:

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

Pedestrian signal heads shall be furnished with the international symbolic "Walking Person" and "Upraised Palm" lenses. Egg crate sun shields are not permitted.

Signal heads shall be positioned according to the "District One Standard Traffic Signal Design Details."

### **SIGNAL HEAD, BACKPLATE.**

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

### **INDUCTIVE LOOP DETECTOR.**

Add the following to Article 1079.01 of the Standard Specifications:

Contracts requiring new cabinets shall provide for card mounted detector amplifiers. Loop amplifiers shall provide LCD displays with loop frequency, inductance, and change of inductance readings.

### **ILLUMINATED SIGN, LIGHT EMITTING DIODE.**

Revise Sections 891 of the Standard Specifications to read:

#### **Description.**

This work shall consist of furnishing and installing an illuminated sign with light emitting diodes.

#### **General.**

The light emitting diode (LED) blank out signs shall be manufactured by National Sign & Signal Company, or an approved equal and consist of a weatherproof housing and door, LEDs and transformers.

#### **(a) Display.**

1. The LED blank out sign shall provide the correct symbol and color for "NO LEFT TURN" OR "NO RIGHT TURN" indicated in accordance with the requirements of the "Manual on Uniform Traffic Control Devices". The message shall be formed by rows of LEDs.
2. The message shall be clearly legible. The message shall be highly visible, anywhere and under any lighting conditions, within a 15 degree cone centered about the optic axis.

The sign face shall be 24 inches (600 mm) by 24 inches (600 mm). The sign face shall be completely illegible when not illuminated. No symbol shall be seen under any ambient light condition when not illuminated.

3. All LEDs shall be T-1 3/4 (5mm) and have an expected lamp life of 100,000 hours. Operating wavelengths will be Red-626nm, Amber-590nm, and Bluish/Green-505nm. Transformers shall be rated for the line voltage with Class A insulation and weatherproofing. The sign shall be designed for operation over a range of temperatures from -35F to +165 F (-37C to +75C).
4. The LED module shall include the message plate, high intensity LEDs and LED drive electronics. Door panels shall be flat black and electrical connections shall be made via barrier-type terminal strip. All fasteners and hardware shall be corrosion resistant stainless steel.

#### **(b) Housing.**

1. The housing shall be constructed of extruded aluminum. All corners and seams shall be heli-arc welded to provide a weatherproof seal around the entire case. Hinges shall be continuous full-length stainless steel. Signs shall have stainless steel hardware and provide tool free access to the interior of the sign. Doors shall be 0.125-inch thick extruded aluminum with a 3/16-inch x 1-inch neoprene gasket and sun hood. The sign face shall have a polycarbonate, matte clear, lexan face plate. Drainage shall be provided by four drain holes at the corners of the housing. The finish on the sign housing shall include two coats of exterior enamel applied after the surface is acid-etched and primed with zinc-chromate primer.
2. Mounting hardware shall be black polycarbonate or galvanized steel and similar to mounting Signal Head hardware and brackets specified herein.

Basis of Payment.

This work shall be paid for at the unit price each for ILLUMINATED SIGN, L.E.D.

**GROUNDING EXISTING HANDHOLE FRAME AND COVER.**

Description.

This work shall consist of all materials and labor required to bond the equipment grounding conductor to the existing handhole frame and handhole cover. All installations shall meet the requirements of the details in the "District One Standard Traffic Signal Design Details" and applicable portions of the Specifications.

The equipment grounding conductor shall be bonded to the handhole frame and to the handhole cover. Two (2) ½-inch diameter x 1 ¼-inch long hex-head stainless steel bolts, spaced 1.75-inches apart center-to-center shall be fully welded to the frame and to the cover to accommodate a heavy duty Listed grounding compression terminal (Burdny type YGHA or approved equal). The grounding compression terminal shall be secured to the bolts with stainless steel split-lock washers and nylon-insert locknuts.

Welding preparation for the stainless steel bolt hex-head to the frame and to the cover shall include thoroughly cleaning the contact and weldment area of all rust, dirt and contaminates. The Contractor shall assure a solid strong weld. The welds shall be smooth and thoroughly cleaned of flux and spatter. The grounding installation shall not affect the proper seating of the cover when closed.

The grounding cable shall be paid for separately.

Method of Measurement.

Units measured for payment will be counted on a per handhole basis, regardless of the type of handhole and its location.

Basis of Payment.

This work shall be paid for at the contract unit price each for GROUNDING EXISTING HANDHOLE FRAME AND COVER which shall be payment in full for grounding the handhole complete.

## **UNIT DUCT.**

All installations of Unit Duct shall be included in the contract and not paid for separately. Polyethylene unit duct shall be used for detector loop raceways to the handholes. On temporary traffic signal installations with detector loops, polyethylene unit duct shall be used for detector loop raceways from the saw-cut to 10 feet (3m) up the wood pole, unless otherwise shown on the plans. Unit duct shall meet the requirements of NEC Article 343.

## **UNINTERRUPTIBLE POWER SUPPLY (UPS).**

### Description.

This work shall consist of furnishing and installing an uninterruptible power supply (UPS).

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

The UPS shall include, but not be limited to the following: inverter/charger, power transfer relay, batteries, battery cabinet, a separate manually operated non-electronic bypass switch, and all necessary hardware and interconnect wiring according to the plans. The UPS shall provide reliable emergency power to the traffic signals in the event of a power failure or interruption. The transfer from utility power to battery power and visa versa shall not interfere with the normal operation of traffic controller, conflict monitor/malfunction management unit, or any other peripheral devices within the traffic controller assembly.

The UPS shall be designed for outdoor applications, and shall meet the environmental requirements of, "NEMA Standards Publication No. TS 2 – Traffic Controller Assemblies", except as modified herein.

### Materials.

The UPS shall be line interactive and provide voltage regulation and power conditioning when utilizing utility power. The UPS shall be sized appropriately for the intersection's normal traffic signal operating connected load, plus 20 percent (20%). The total connected traffic signal load shall not exceed the published ratings for the UPS. The UPS shall provide a minimum of six (6) hours of normal operation run-time for signalized intersections with LED type signal head optics at 77 °F (25 °C) (minimum 700 W/VA active output capacity, with 90 percent minimum inverter efficiency).

The maximum transfer time from loss of utility power to switchover to battery backed inverter power shall be 65 milliseconds.

The UPS shall have a minimum of three (3) sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) relay contact closures, available on a panel mounted terminal block or locking circular connectors, rated at a minimum 120 V/1 A, and labeled so as to identify each contact according to the plans. Contact closures shall be energized whenever the unit:

- Switches to battery power. Contact shall be labeled or marked "On Batt".
- Has been connected to battery power for two (2) hours. Contact shall be labeled or marked "Timer".

- Has an inverter/charger failure. Contact shall be labeled or marked "UPS Fail".

Operating temperature for the inverter/charger, power transfer relay, and manual bypass switch shall be -35 to 165 °F (-37 to +74 °C).

Both the power transfer relay and manual bypass switch shall be rated at 240 VAC/30 amps, minimum.

The UPS shall use a temperature-compensated battery charging system. The charging system shall compensate over a range of 1.4 – 2.2 mV/°F (2.5 - 4.0 mV/°C) per cell. The temperature sensor shall be external to the inverter/charger unit. The temperature sensor shall come with 6.5 ft (2 m) of wire.

Batteries shall not be recharged when battery temperature exceeds 122 °F ± 5 °F (50 °C ± 3 °C).

The UPS shall bypass the utility line power whenever the utility line voltage is outside of the following voltage range: 85 VAC to 135 VAC (± 2 VAC).

When utilizing battery power, the UPS output voltage shall be between 110 and 125 VAC, pure sine wave output, ≤ 3 percent THD, 60 Hz ± 3 Hz.

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

When the utility line power has been restored at above 90 VAC ± 2 VAC for more than 30 seconds, the UPS shall dropout of battery backup mode and return to utility line mode.

When the utility line power has been restored at below 130 VAC ± 2 VAC for more than 30 seconds, the UPS shall dropout of battery backup mode and return to utility line mode.

The UPS shall be equipped to prevent a malfunction feedback to the cabinet or from feeding back to the utility service.

In the event of inverter/charger failure, the power transfer relay shall revert to the NC state, where utility line power is reconnected to the cabinet. In the event of an UPS fault condition, the UPS shall always revert back to utility line power.

Recharge time for the battery, from "protective low-cutoff" to 80 percent or more of full battery charge capacity, shall not exceed twenty hours.

The manual bypass switch shall be wired to provide power to the UPS when the switch is set to manual bypass.

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

As the battery reserve capacity reaches 50 percent, the intersection shall automatically be placed in all-red flash. The UPS shall allow the controller to automatically resume normal operation after the power has been restored. The UPS shall log an alarm in the controller for each time it is activated.

A blue LED indicator light shall be mounted on the front of the traffic signal cabinet or on the side of the UPS cabinet facing traffic and shall turn on to indicate when the cabinet power has been disrupted and the UPS is in operation. The light shall be a minimum 1 in. (25 mm) diameter, be viewable from the driving lanes, and able to be seen from 200 ft (60 m) away.

All 24 volt and 48 volt systems shall include an external or internal component that monitors battery charging to ensure that every battery in the string is fully charged. The device shall compensate for the effects of adding a new battery to an existing battery system by ensuring that the charge voltage is spread equally across all batteries.

#### Mounting/Configuration.

The inverter/charger unit shall be rack or shelf-mounted.

All interconnect wiring provided between the power transfer relay, manual bypass switch, and cabinet terminal service block shall be at least 6.5 ft (2 m) of #10 AWG wire.

Relay contact wiring provided for each set of NO/NC relay contact closure terminals shall be 6.5 ft (2 m) of #18 AWG wire.

#### Battery Cabinet.

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

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

The manually bypass switch shall be installed inside the traffic signal cabinet.

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

A minimum of three shelves shall be provided. Each shelf shall support a load of 132 lb (60 kg) minimum.

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

The battery cabinet shall be ventilated through the use of louvered vents, filters, and one thermostatically controlled fan. The cabinet fan shall not be energized when the traffic signals are on UPS power.

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

The UPS with battery cabinet shall come with all bolts, conduits and bushings, gaskets, shelves, and hardware needed for mounting. A warning sticker shall be placed on the outside of the cabinet indicating that there is an uninterruptible power supply inside the cabinet.

Maintenance, Displays, Controls, and Diagnostics.

The UPS shall include a display and/or meter to indicate current battery charge status and conditions.

The UPS shall have lightning surge protection compliant with IEEE/ANSI C.62.41.

The UPS shall be equipped with an integral system to prevent battery from destructive discharge and overcharge.

The UPS hardware and batteries shall be easily replaced without requiring any special tools or devices.

The UPS shall include a resettable front-panel event counter display to indicate the number of times the UPS was activated. The total number of hours the unit has operated on battery power shall be available from the controller unit or UPS unit.

The UPS shall be equipped with an RS-232 port.

The UPS shall include tip or kill switch installed in the battery cabinet, which shall completely disconnect power from the UPS when the switch is manually activated.

The UPS shall incorporate a flanged electric generator inlet for charging the batteries and operating the UPS. The generator connector shall be male type, twist-lock, rated as 15A, 125VAC with a NEMA L5-15P configuration and weatherproof lift cover plate (Hubbell model HBL4716C or approved equal). Access to the generator inlet shall be from a secured weatherproof lift cover plate or behind a locked battery cabinet police panel.

The manufacturer shall include two sets of equipment lists, operation and maintenance manuals, board-level schematic and wiring diagrams of the UPS, and battery data sheets. The manufacturer shall include any software needed to monitor, diagnose, and operate the UPS. The manufacturer shall include any required cables to connect the UPS to a laptop computer.

Battery System.

Individual batteries shall be 12 V type, 65 amp-hour minimum capacity at 20 hours, and shall be easily replaced and commercially available off the shelf.

The UPS shall consist of an even number of batteries that are capable of maintaining normal operation of the signalized intersection for a minimum of six hours. Calculations shall be provided showing the number of batteries of the type supplied that are needed to satisfy this requirement. A minimum of four batteries shall be provided.

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

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

The batteries shall be provided with appropriate interconnect wiring and corrosion resistant mounting trays and/or brackets appropriate for the cabinet into which they will be installed.

Batteries shall indicate maximum recharge data and recharging cycles.

Battery interconnect wiring shall be via a modular harness. Batteries shall be shipped with positive and negative terminals pre-wired with red and black cabling that terminates into a typical power-pole style connector. The harness shall be equipped with mating power-pole style connectors for the batteries and a single, insulated plug-in style connection to the inverter/charger unit. The harness shall allow batteries to be quickly and easily connected in any order and shall be keyed and wired to ensure proper polarity and circuit configuration.

Battery terminals shall be covered and insulated so as to prevent accidental shorting.

#### Warranty.

The warranty for an uninterruptible power supply (UPS) shall cover a minimum of two years from date the equipment is placed in operation; however, the batteries of the UPS shall be warranted for full replacement for a minimum of five years from the date the traffic signal and UPS are placed into service.

#### Installation.

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

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

#### Basis of Payment.

This work will be paid for at the contract unit price per each for UNINTERRUPTIBLE POWER SUPPLY.

## **SIGNAL HEAD, LIGHT EMITTING DIODE.**

### **Description.**

This work shall consist of furnishing and installing a traffic signal head or pedestrian signal head with light emitting diodes (LED) of the type specified in the plan or retrofitting an existing traffic signal head with a traffic signal module or pedestrian signal module with LEDs as specified in the plans.

### **General.**

LED signal heads (All Face and Section Quantities), (All Mounting Types) shall conform fully to the requirements of Sections 880 and 881 and Articles 1078.01 and 1078.02 of the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2007, and amended herein:

1. The LED signal modules shall be replaced or repaired if an LED signal module fails to function as intended due to workmanship or material defects within the first 60 months from the date of delivery. LED signal modules which exhibit luminous intensities less than the minimum values specified in Table 1 of the ITE Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Circular Signal Supplement (June 27, 2005) [VTSCH] or show signs of entrance of moisture or contaminants within the first 60 months of the date of delivery shall be replaced or repaired. The manufacturer's written warranty for the LED signal modules shall be dated, signed by an Officer of the company and included in the product submittal to the State.
2. Each module shall consist of an assembly that utilizes LEDs as the light source in lieu of an incandescent lamp for use in traffic signal sections.

### **(a) Physical and Mechanical Requirements**

1. Modules can be manufactured under this specification for the following faces:
  - a. 12 inch (300 mm) circular, multi-section
  - b. 12 inch (300 mm) arrow, multi-section
  - c. 12 inch (300 mm) pedestrian, 2 sections
2. The maximum weight of a module shall be 4 lbs. (1.8 kg).
3. Each module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.
4. Material used for the lens and signal module construction shall conform to ASTM specifications for the materials.
5. The lens of the module shall be tinted with a wavelength-matched color to reduce sun phantom effect and enhance on/off contrast. The tinting shall be uniform across the lens face. Polymeric lens shall provide a surface coating or chemical surface treatment

applied to provide abrasion resistance. The lens of the module shall be integral to the unit, convex with a smooth outer surface and made of plastic. The lens shall have a textured surface to reduce glare.

6. The use of tinting or other materials to enhance ON/OFF contrasts shall not affect chromaticity and shall be uniform across the face of the lens.
7. Each module shall have a symbol of the type of module (i.e. circle, arrow, etc.) in the color of the module. The symbol shall be 1 inch (25.4 mm) in diameter. Additionally, the color shall be written out in 1/2 inch (12.7mm) letters next to the symbol.

(b) Photometric Requirements

1. The minimum initial luminous intensity values for the modules shall conform to the values in Table 1 of the VTCSH (2005) for circular signal indications, and as stated in Table 3 of these specifications for arrow and pedestrian indications at 25°C.
2. The modules shall meet or exceed the illumination values stated in Article 1078.01(3)c of the "Standard Specifications for Road and Bridge Construction," Adopted January 1, 2007 for circular signal indications, and Table 3 of these specifications for arrow and pedestrian indications, throughout the useful life based on normal use in a traffic signal operation over the operating temperature range.
3. The measured chromaticity coordinates of the modules shall conform to the chromaticity requirements of Section 4.2 of the VTCSH (2005).
4. The LEDs utilized in the modules shall be AlInGaP technology for red, yellow, Portland orange (pedestrian) and white (pedestrian) indications, and GaN for green indications, and shall be the ultra bright type rated for 100,000 hours of continuous operation from -40°C to +74°C.

(c) Electrical

1. Maximum power consumption for LED modules is per Table 2.
2. LED modules will have EPA Energy Star compliance ratings, if applicable to that shape, size and color.
3. Operating voltage of the modules shall be 120 VAC. All parameters shall be measured at this voltage.
4. The modules shall be operationally compatible with currently used controller assemblies (solid state load switches, flashers, and conflict monitors).
5. When a current of 20 mA AC (or less) is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.
6. The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.

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

(d) Retrofit Traffic Signal Module

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

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

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

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

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

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

1. Each pedestrian signal LED module shall provide the ability to actuate the solid upraised hand and the solid walking person on one 12 inch (300mm) section.
2. Two (2) pedestrian sections shall be installed. The top section shall be wired to illuminate only the upraised hand and the bottom section shall be the walking man.
3. "Egg Crate" type sun shields are not permitted. All figures must be a minimum of 9 inches (225mm) in height and easily identified from a distance of 120-feet (36.6m).

**Basis of Payment.**

This item shall be paid for at the contract unit price each for SIGNAL HEAD, LED, of the type specified, which price shall be payment in full for furnishing the equipment described above including signal head, LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of signal faces, the number of signal sections, and the method of mounting.

Pedestrian head(s) shall be paid for at the contract unit price each for PEDESTRIAN SIGNAL HEAD, LED, of the type specified and of the particular kind of material when specified.

The type specified will indicate the number of faces and the method of mounting.

When installed in an existing signal head, this item shall be paid for at the contract unit price each for SIGNAL HEAD, LED of the type specified, RETROFIT, which price shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of signal faces, the number of signal sections, and the method of mounting.

When installed in an existing signal head, this item shall be paid for at the contract unit price each for PEDESTRIAN SIGNAL HEAD, LED, of the type specified, RETROFIT, which price shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of faces and the method of mounting.

**TABLES**

Table 2 Maximum Power Consumption (in Watts)

	Red		Yellow		Green	
	25°C	74°C	25°C	74°C	25°C	74°C
12 inch (300 mm) circular	11	17	22	25	15	15
12 inch (300 mm) arrow	9	12	10	12	11	11
	Hand-Portland Orange		Person-White			
Pedestrian Indication	6.2		6.3			

Table 3 Minimum Initial & Maintained Intensities for Arrow and Pedestrian Indications (in cd/m<sup>2</sup>)

	Red	Yellow	Green
Arrow Indication	5,500	11,000	11,000

**PEDESTRIAN COUNTDOWN SIGNAL HEAD, LIGHT EMITTING DIODE.**

Description.

This work shall consist of furnishing and installing a pedestrian countdown signal head, with light emitting diodes (LED) of the type specified in the plan.

Pedestrian Countdown Signal Head, Light Emitting Diode, shall conform fully to the SIGNAL HEAD, LIGHT EMITTING DIODE specification, with the following modifications:

(a) Application.

1. Pedestrian Countdown Signal Heads, shall not be used at signalized intersections where traffic signals and railroad warning devices are interconnected.
2. All pedestrian signals at an intersection shall be the same type and have the same display. No mixing of countdown and other types of pedestrian traffic signals will be permitted.

(b) General.

1. The module shall operate in one mode: Clearance Cycle Countdown Mode Only. The countdown module shall display actual controller programmed clearance cycle and shall start counting when the flashing clearance signal turns on and shall countdown to "0" and turn off when the steady Upraised Hand (symbolizing Don't Walk) signal turns on. Module shall not have user accessible switches or controls for modification of cycle.
2. At power on, the module shall enter a single automatic learning cycle. During the automatic learning cycle, the countdown display shall remain dark.
3. The module shall re-program itself if it detects any increase or decrease of Pedestrian Timing. The counting unit will go blank once a change is detected and then take one complete pedestrian cycle (with no counter during this cycle) to adjust its buffer timer.
4. The module shall allow for consecutive cycles without displaying the steady Upraised Hand.
5. The module shall recognize preemption events and temporarily modify the crossing cycle accordingly.
6. If the controller preempts during the Walking Person (symbolizing Walk), the countdown will follow the controller's directions and will adjust from Walking Person to flashing Upraised Hand. It will start to count down during the flashing Upraised Hand.

7. If the controller preempts during the flashing Upraised Hand, the countdown will continue to count down without interruption.
8. The next cycle, following the preemption event, shall use the correct, initially programmed values.
9. If the controller output displays Upraised Hand steady condition and the unit has not arrived to zero or if both the Upraised Hand and Walking Person are dark for some reason, the unit suspends any timing and the digits will go dark.
10. The digits will go dark for one pedestrian cycle after loss of power of more than 1.5 seconds.
11. The countdown numerals shall be two (2) "7 segment" digits forming the time display utilizing two rows of LEDs.
12. The LED module shall meet the requirements of the Institute of Transportation Engineers (ITE) LED purchase specification, "Pedestrian Traffic Control Signal Indications - Part 2: LED Pedestrian Traffic Signal Modules," or applicable successor ITE specifications, except as modified herein.
13. The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.
14. In the event of a power outage, light output from the LED modules shall cease instantaneously.
15. The LEDs utilized in the modules shall be AllnGaP technology for Portland Orange (Countdown Numerals and Upraised Hand) and GaN technology for Lunar White (Walking Person) indications.
16. The individual LEDs shall be wired such that a catastrophic loss or the failure of one or more LED will not result in the loss of the entire module.

(c) Pedestrian Countdown Signal Heads.

1. Pedestrian Countdown Signal Heads shall be 16 inch (406mm) x 18 inch (457mm), for single units with the housings glossy black polycarbonate. Connecting hardware and mounting brackets shall be polycarbonate (black). A corrosion resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on.
2. Each pedestrian signal LED module shall be fully MUTCD compliant and shall consist of double overlay message combining full LED symbols of an Upraised Hand and a Walking Person. "Egg Crate" type sun shields are not permitted. Numerals shall measure 9 inches (229mm) in height and easily identified from a distance of 120 feet (36.6m).

(d) Electrical.

1. Maximum power consumption for LED modules is 29 watts.
2. The measured chromaticity shall remain unchanged over the input line voltage range listed of 80 VAC to 135 VAC.

Basis of Payment.

This item shall be paid for at the contract unit price each for PEDESTRIAN COUNTDOWN SIGNAL HEAD, LED, of the type specified, which shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition. The type specified will indicate the number of faces and the method of mounting.

**FULL-ACTUATED CONTROLLER AND CABINET (SPECIAL)**

Effective: January 1, 2002

Revised: January 1, 2007

This work shall consist of furnishing and installing a(n) "Eagle" brand traffic actuated solid state digital controller in the controller cabinet of the type specified, meeting the requirements of the current District One Traffic Signal Special Provisions including conflict monitor, load switches and flasher relays, with all necessary connections for proper operation..

Basis of Payment. This work will be paid for at the contract unit price each for FULL-ACTUATED CONTROLLER AND TYPE IV CABINET (SPECIAL) or FULL-ACTUATED CONTROLLER AND TYPE V CABINET (SPECIAL).

**Relocate Existing Surveillance Camera, Cabinet, and Pole**

This work consists of furnishing all necessary equipment, materials, labor, traffic control (as required), and coordination to relocate the existing IL 60/I-94 interchange surveillance camera owned and operated by the Lake County Department of Transportation (LCDOT) and to re-establish its function to the satisfaction of the Engineer and LCDOT. The camera is currently located near the northwest corner of the IL 60 bridge over I-94. Three relocations are anticipated.

Prior to initiation of earthwork on the north side of IL 60 adjacent to the west end of the bridge, the surveillance camera and any other essential hardware and/or cabinet shall be removed from the existing pole and relocated to a temporary wood pole south of IL 60, west of I-94, and adjacent to the bridge. The removed aluminum light pole shall be salvaged for reinstallation at the camera and cabinet final location. The temporary wood pole shall also function as part of the temporary traffic signal interconnect system. Power and fiber optic cables shall be re-established with overhead lines. The Contractor shall submit the proposed location of the temporary pole and the camera mounting height and details to the Engineer for approval two weeks in advance of the planned relocation.

The camera shall be moved to a second temporary location prior to initiation of earthwork on the south side of IL 60 adjacent to the west end of the bridge. Requirements for the relocation shall

be similar to above except that the camera will be relocated to a temporary wood pole, also part of the temporary traffic signal interconnect system, on the north side of IL 60 adjacent to the west end of the bridge.

Final relocation of the camera shall be from its temporary location on the north side of IL 60 to the salvaged aluminum metal pole and foundation at a location adjacent to the northwest corner of the new IL 60 over I-94 bridge to be determined by the Engineer in cooperation with LCDOT. Installation of the permanent pole, its foundation, and permanent power and fiber optic cables for the relocated camera shall be paid for separately elsewhere in the contract.

Relocation of the existing surveillance camera will be paid for at the contract unit price per each for RELOCATE EXISTING SURVEILLANCE CAMERA, CABINET, AND POLE

### **Paint Traffic Signal Equipment**

Description: The painting of all traffic signal equipment as listed below shall be an alternative to the finishes of all traffic signal equipment as listed in the "Standard Specifications for Road and Bridge Construction." **This Special Provision is applicable only to the traffic signal equipment associated with the intersection of Field Drive/Saunders Road and Illinois Route 60.**

All proposed traffic signal equipment and associated brackets, bolts, etc. covered under the specifications listed below shall be painted with PPG Envirocron #PCU90196 in gloss black in accordance with the requirements of Section 1071.01 of the "Standard Specifications for Road and Bridge Construction."

- 1077.01 (d) Traffic Signal Post Base and Mast Arm Assembly and Pole
- 1077.02 (b) Pedestrian Push Button Post
- 1078.01 (g) Traffic Signal Head
- 1078.02 (f) Pedestrian Signal Head

Powder coating by the manufacturer will be required over the galvanization.

Method of Measurement: This work will not be measured separately, but will be on a lump sum basis.

Basis of Payment: The cost of painting the required signal equipment shall be paid for at the contract unit price per lump sum for PAINT TRAFFIC SIGNAL EQUIPMENT.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 801. ELECTRICAL REQUIREMENTS**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

**DESCRIPTION OF ROADWAY LIGHTING AND ELECTRICAL WORK**

Roadway lighting and electrical work for the Tollway, including plaza areas, interchanges, maintenance areas, service areas, and incidental construction shall consist of installing, modifying, connecting and/or removing, either permanently or temporarily, materials and apparatus required for the illumination of roadways, parking lots, signs and signals, and other electrical work as shown in the plans, and set forth in the Special Provisions, or as directed by the Engineer.

Electrical work shall comply with all requirements of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction except as modified in these Supplemental Specifications.

Electrical Work on the Illinois Department of Transportation system roadways or roadway systems of other Agencies is not governed by the Supplemental Specifications but shall continue to be governed by the Standards of the Illinois Department of Transportation or other Agency having jurisdiction for the roadway.

Section 801 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Delete the 3rd paragraph of Article 801.15 and replace with the following:

Upon completion of all roadway lighting and electrical work, and testing, the Contractor shall submit to the Engineer 10 days before the scheduled date for final inspection, 6 copies of all revised and current Record Drawings, and 6 copies of all test readings taken by the Contractor in accordance with Article 801.13. Record Drawings and test data shall be dated and certified by the Contractor as representing the final condition of the work. During the ensuing ten calendar day period, the Contractor shall record each and every fault that occurs, with the method and date of correction of each, and submit such record to the Engineer at the time of final inspection. The final inspection shall be made according to Article 105.13. No roadway lighting and electrical work will be accepted by the Engineer until components have been in satisfactory operation for ten consecutive days without interruption or failure after final inspection.

Add the following Articles to Section 801:

**801.17 Lighting Cables.**

- (a) Splices. Splices above grade, such as in poles and junction boxes, shall have a waterproof sealant and a heat-shrinkable plastic cap. The cap shall be of a size suitable for the splice and shall have a factory-applied sealant within. Additional seal of the splice shall be assured by the application of sealant tape or the use of a sealant insert prior to the installation of the cap. Either method shall be assured compatible with the cap sealant. Tape sealant shall be applied in not less than one half-lapped layer for a length at least 1/4 inch longer than the cap length and the tape shall also be wrapped into the crotch of the splice. Insert sealant shall be placed between the wires of the splice and shall be positioned to line up flush or extend slightly past the open base of the cap.
- (b) Identification. Each wire installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.
- (c) Fuse Installation. Standard fuse holders shall be used on non-frangible (non-breakaway) light pole installations and quick-disconnect fuse holders shall be used on frangible (breakaway) light pole installations. Wires shall be carefully stripped only as far as needed for connection to the device. Over-stripping shall be avoided. An oxide inhibiting lubricant shall be applied to the wire for minimum connection resistance before the terminals are crimped-on. Crimping shall be performed in accordance with the fuse holder manufacturer's recommendations. The exposed metal connecting portion of the assembly shall be taped with two half-lapped wraps of electrical tape and then covered by the specified insulating boot. The fuse holder shall be installed such that the fuse side is connected to the pole wire (load side) and the receptacle side of the holder is connected to the line side.

**801.18 Grounding of Lighting Systems.** All electrical systems, equipment and appurtenances shall be properly grounded in strict conformance with the NEC, even though every detail of the requirements is not specified or shown. Good ground continuity throughout the electrical system shall be assured. All electrical circuit runs shall have a continuous equipment grounding conductor. IN NO CASE SHALL THE EARTH BE CONSIDERED AS AN ADEQUATE EQUIPMENT GROUNDING PATH. Where connections are made to painted surfaces, the paint shall be scraped to fully expose metal at the connection point and serrated connectors or washers shall be used. Where metallic conduit is utilized as the equipment grounding conductor, extreme care shall be exercised to assure continuity at joints and termination points. No wiring run shall be installed without a suitable equipment ground conductor. Where no equipment ground conductor is provided for in the plans and associated specified pay item, the Contractor is obligated to bring the case to the attention of the Engineer who will direct the Contractor accordingly. All connections to ground rods, structural steel, reinforcing steel or fencing shall be made with exothermic welds. Where such connections are made to insulated conductors, the connection shall be wrapped with at least 4 layers of electrical tape extended 6 inches onto the conductor insulation. Where a ground field of "made" electrodes is provided, the exact locations of the rods shall be documented by dimensioned drawings as part of the Record Drawings. Equipment ground wires shall be bonded, using a splice and pigtail connection, to all boxes and other metallic enclosures throughout the wiring system.

**801.19 Raceway Installation.** The following requirements shall apply to all raceways installed regardless of type, size, installation method, or system (lighting, surveillance, communication, etc.) for which the raceway will be used. These requirements are minimal installation criteria and shall be required even if lesser requirements are detailed within the installation section for individual raceway types.

Raceways shall be protected from mechanical and physical damage during construction. Open raceway ends shall be capped in accordance with manufacturer's recommendations. Raceways shall be cleared of all dirt, water, excess concrete, and other foreign materials with a dry swab and mandrel. Internal obstructions shall be repaired to the satisfaction of the Engineer. The raceway shall be continuous as shown on the plans, with no break or obstruction between junction boxes and through the entire raceway system.

A pull rope shall be installed in each raceway that does not have cables installed in it under the contract. A 3/8 inch nylon rope shall be blown through following a mandrel being pulled through the conduit to demonstrate continuity through the entire raceway system. The size(s) of the mandrel shall be in accordance with the size(s) of the conduit as shown on the plans. The rope shall be left in the conduit, and shall be continuous between all conduit terminal points. Each rope end shall be securely fitted with a washer or other approved device, of a diameter larger than the conduit diameter, to prevent the rope from coiling back inside the conduit and to insure accessibility for the installation of cables.

Continuity of the raceway system shall be demonstrated in the presence of the Engineer.

**Illinois State Toll Highway Authority**  
**SUPPLEMENTAL SPECIFICATION**  
**FOR**

**SECTION 806. GROUNDING**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Replace this section of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 in its entirety with the following.

**806.01 Description.** This item shall consist of furnishing, installing and connecting ground rods for the grounding of service neutral conductors and for supplementing the equipment grounding system via connection at poles or other equipment throughout the system. All materials and work shall be in accordance with Article 250 of the NEC.

**806.02 Materials.** Materials shall be according to the following Articles of Division 1000 -  
Materials

Item	Article/Section
(a) Ground Rod.....	1087.01(b)
(b) Copper Ground Wire.....	1087.01(a)
(c) Access Well.....	1087.01(c)

### CONSTRUCTION REQUIREMENTS

**806.03 General.** All ground rods shall be not less than 5/8 inch in diameter and not less than 10 feet in length.

**806.04 Installation.** All connections to ground rods, structural steel or fencing shall be made with exothermic welds. Where such connections are made to insulated conductors, the connection shall be wrapped with at least 4 layers of electrical tape extended 6 inches onto the conductor insulation.

Ground rods shall be driven so that the tops of the rod are 24 inches below finished grade. Where indicated, ground wells shall be included to permit access to the rod connections.

With the approval of the Engineer where ground conditions, such as rock, preclude the installation of the ground rod, the ground rod may be deleted.

Ground rod connection shall be made by exothermic welds. Ground wire for connection to foundation steel or as otherwise indicated shall be stranded uncoated bare copper in accordance the applicable requirements of ASTM Designation B-3 and ASTM Designation B-8 and shall be included in this item. Unless otherwise indicated, the wire shall not be less than No. 2 AWG.

Where connections are made to epoxy coated reinforcing steel, the epoxy coating shall be sufficiently removed to facilitate the exothermic weld.

**806.05 Testing.** Testing resistance to ground shall be according to Article 801.13(a)(5). If the measured resistance to ground exceeds 10 ohms, additional rods shall be added to the grounding electrode. A maximum of three rods shall be coupled together. If coupling three rods together does not lower the resistance to 10 ohms, then additional grounding electrodes shall be installed, a minimum of 24 inches from the initial installation and be connected by a grounding electrode conductor to form a ground field. If the resistance to ground still exceeds 10 ohms after three sets of three coupled electrodes have been installed in a ground field or where sub-surface conditions limit the depth to which the grounding electrode(s) can be installed, the Contractor shall contact the Engineer for further instructions.

**806.06 Measurement and Payment.** No separate measurement or payment will be made for Ground Rods. The cost for furnishing and installing ground rods, ground wire, connections and access wells in accordance with these Specifications shall be considered as included in the contract unit prices for the various pay items under which their installation is required by the Specifications, the Special Provisions the Plan details or the controlling codes.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 811. EXPOSED RACEWAYS**

**Issued January 1, 200**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 811 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Add the following paragraphs to Article 811.03(b):

The personnel installing the PVC coated conduit must be trained and certified by the PVC coated conduit Manufacturer or Manufacturer's representative to install PVC coated conduit. Documentation demonstrating this requirement must be submitted for review and approval.

All conduit fittings, couplings, channel supports, and clamps shall be PVC coated. All other mounting hardware and appurtenances shall be stainless steel.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 813. JUNCTION BOXES**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 813 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Add the following paragraph to Article 813.03:

Junction boxes embedded in concrete median walls and concrete parapet walls shall be stainless steel and shall be installed flush with the exterior surface of the concrete as shown in

the contract documents. Conduit openings shall be provided as required in the contract documents. Junction boxes embedded in concrete median walls shall be 20"x12"x8". Junction boxes embedded in concrete parapet walls shall be 20"x12"x7".

**Illinois State Toll Highway Authority  
SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 817. CABLE IN RACEWAY**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 817 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Add the following paragraphs to Article 817.03:

Circuit conductors shall be individually identified with factory printed adhesive, wrap-around cloth marking tape indicating the circuit number or other identification as shown in the plans. They shall be identified wherever they are exposed in light pole bases, handholes, junction boxes, pull boxes, panels and control consoles.

Wire splices and taps shall only be made in junction and outlet boxes, handholes, wireways, equipment terminal boxes, and pole bases where they will be readily accessible. Wire splices and tap connections will not be allowed in control consoles, conduit fittings, pull boxes and handholes required only for pulling conductors.

Finished splices and taps shall be arranged in underground handholes and pole bases so as to position them near the top of the underground handholes and opposite the handholes at the pole bases.

Wire and cable in conduit and duct shall be made continuous from terminal to terminal without intermediate splices. Sufficient conductor slack shall be provided in junction boxes, pull boxes, handholes, light pole bases, and terminal locations to allow for thermal movement of the conductors and the making-up of any required branch circuit tap connection as indicated in the plans.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 821. ROADWAY LUMINAIRES**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 821 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Replace Article 821.04 with the following:

**821.04 Conventional Pole Installation**

- (a) Luminaire. Luminaires have been specified based on published photometric data of General Electric and Hubbell. The manufacturer's published photometric data is on file with the Tollway.

Where luminaires manufactured by General Electric are supplied, luminaries labeled Type M-C-II on the plans shall have optics as defined by General Electric Photometric File No. 35-177620, luminaires labeled Type M-C-III shall have optics as defined by Photometric General Electric File No. 35-177323, and luminaires labeled Type S-C-II shall have optics as defined by General Electric Photometric File No. 35-177324.

Where luminaires manufactured by Hubbell are supplied, luminaires labeled Type M-C-II on the plans shall have optics as defined by Hubbell Photometric File No. HP-03062 and luminaires labeled Type M-C-III shall have optics as defined by Hubbell Photometric File No. HP-03065.

All luminaires supplied by the Contractor shall meet or exceed the manufacturer's published photometric data on file with the Tollway.

- (b) Horizontal mount luminaires shall be installed in a level, horizontal plane, with adjustments as needed to insure that the optics are set perpendicular to the traveled roadway.
- (c) When installed on a bridge mounted pole, a minimum size stainless steel 1/4-20NC set screw shall be provided to secure the luminaire to the mast arm tenon. A hole shall be drilled and tapped thru the tenon and luminaire mounting bracket and then fitted with the screw.

Replace Article 821.06 with the following:

**821.06 Underpass Installation**

- (a) Luminaire. Underpass luminaires shall be 150 watt high pressure sodium. Luminaires have been specified based on published photometric data of Holophane. The manufacturer's published photometric data is on file with the Tollway.

All underpass luminaires shall have optics as defined by Holophane Photometric Test No. 33429.

All luminaires supplied by the Contractor shall meet or exceed the manufacturer's published photometric data on file with the Tollway.

- (b) In addition to the general installation requirements each underpass luminaire shall be installed in strict accordance with the plans and the manufacturer's recommendations.
- (c) When attached directly to a structure, the underpass luminaire shall be installed on stainless steel c-channels to provide space between the luminaire and the structure.
- (d) When suspended the underpass luminaires shall be installed 1 inch above the lowest underpass beam and shall be mounted parallel to the plan of the roadway, taking into consideration the grade and superelevation of the traveled lanes. Vibration dampening devices shall be used and be sized to the weight and shape of the underpass luminaire. All mounting hardware, except the vibration dampers, shall be stainless steel.
- (e) The underpass luminaire shall include all conduit, fittings and cable from the closest junction box to the luminaire and all mounting and attachment hardware.

Replace Article 821.07 with the following:

**821.07 Sign Lighting Installation**

- (a) Sign Luminaire

(1) Luminaire. Sign luminaires shall be 250 watt, mercury vapor. Luminaires have been specified based on published photometric data of Holophane. The manufacturer's published photometric is on file with the Tollway.

All luminaires shall have optics as defined by Holophane Photometric Test No. 40896.

All luminaires supplied by the Contractor shall meet or exceed the manufacturer's published photometric data on file with the Tollway.

- (2) Each sign luminaire shall be installed in accordance with the Standard Drawings.
- (3) Each luminaire shall be aimed and adjusted at night when fully illuminated to provide the optimum field of lighting flux on the sign panel.
- (4) Each luminaire shall be furnished with a ballast suitable for remote mounting.

(b) Sign Beacon

- (1) Sign beacons shall be 116 Watt, Incandescent.
- (2) Each sign beacon shall be installed in accordance with the Standard Drawings and shall include the installation of sign beacon supports as indicated in the Standard Drawings or as directed by the Engineer.
- (3) Each sign beacon shall be aimed and adjusted at night. The cost for furnishing and installing sign beacon supports, furnishing and installing the lamp specified, and for beacon aiming, adjusting, and testing shall be considered as included in the contract unit price for Sign Beacon.

Replace Article 821.08 with the following:

**821.08 Basis of Payment.** This work will be paid at the contract unit price per each for LUMINAIRE or TEMPORARY LUMINAIRE, of the lamp type, mount type and wattage specified; PARKING LOT LUMINAIRE, UNDERPASS LUMINAIRE, or SIGN LUMINAIRE, of the lamp type and wattage specified; or SIGN BEACON of the wattage specified.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 842. REMOVAL OF LIGHTING UNITS**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 842 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows.

Revise Article 842.03(a) to read:

- (a) Removal of Lighting Unit, No Salvage. Steel poles, mast arms and all associated hardware and appurtenances shall become the property of the Contractor and shall be disposed of according to Article 202.03.

Luminaires shall remain the property of the Tollway and shall be removed, boxed in new containers, approved by the Engineer, and delivered to a Tollway facility, as designated by the Engineer. Luminaires shall be unloaded and stacked as directed by the Engineer. Wood blocking, banding and other appurtenant items required for the proper stacking and protection shall be included.

Revise Article 842.03(b) to read:

- (a) Removal of Lighting Unit, Salvage. Aluminum poles, mast arms, luminaires and all associated hardware and appurtenances shall remain the property of the Tollway and shall be delivered to a Tollway facility, as designated by the Engineer. All materials shall be unloaded and stacked there as directed by the Engineer. Luminaires shall be removed and be boxed in new containers, approved by the Engineer. Wood blocking, banding and other appurtenant items required for the proper stacking and protection shall be included.

Add the following paragraphs to Article 842.03(c):

- (c) When any light pole is found to have a sign or signs attached, the Contractor shall notify the Tollway's Sign Shop not less than 5 working days prior to the removal of such pole. This 5 day advance notice notwithstanding, the removal of any such pole shall not be undertaken until the sign or signs have been removed. The Contractor is not authorized to remove such signs unless specifically so directed by the Engineer.
- (d) Removal of Luminaire. Underpass and sign luminaires which are removed shall remain the property of the Tollway and shall be removed, boxed in new containers, approved by the Engineer, and delivered to a Tollway facility, as designated by the Engineer. Luminaires shall be unloaded and stacked as directed by the Engineer. Wood blocking, banding and other appurtenant items required for the proper stacking and protection shall be included.  
All associated conduit, wire, junction boxes, hardware and appurtenant materials shall be removed and shall become the property of the Contractor and shall be disposed of according to Article 202.03.

Replace Article 842.06 with the following:

**842.06 Basis of Payment.** Removal of lighting units will be paid for at the contract unit price per each for REMOVAL OF EXISTING LIGHTING UNIT, SALVAGE; REMOVAL OF EXISTING LIGHTING UNIT, NO SALVAGE; REMOVAL OF SIGN LUMINAIRE; or REMOVAL OF UNDERPASS LUMINAIRE.

Foundation removal will be paid for at the contract unit price per each for POLE FOUNDATION, REMOVED or POLE FOUNDATION REMOVED, METAL.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 846. MAINTAIN LIGHTING SYSTEM**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Add the following new articles:

**846.01 Description.** This work shall consist of furnishing all labor, equipment, and incidental materials for maintaining roadway lighting systems, parking lot lighting system, and sign lighting systems until the proposed new systems are installed, energized, tested, and accepted for operation by the Tollway.

The work shall include any necessary temporary devices to maintain existing roadway illumination. The location and protection of temporary devices necessary to comply with these requirements shall be subject to the approval of the Engineer.

Any temporary wire or cable which may be required to be installed overhead between existing poles or temporary devices shall be furnished, installed, terminated, and maintained in service until the proposed lighting systems are installed, tested, and accepted for operation by the Authority.

Where removal of existing sign lighting equipment is required before new sign lighting equipment can be installed, the new sign lighting system shall be put in operation within 3 calendar days from the time the existing system is de-energized for removal.

All materials shall be furnished and delivered by the Contractor to the jobsite at no additional cost to the Tollway.

Effective the date the Contractor's activities (electrical or otherwise) at the job site begin, the Contractor shall be responsible for the proper operation and maintenance of all existing and proposed lighting systems which are part of, or which may be affected by the work until final acceptance or as otherwise determined by the Engineer.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting systems which may be affected by the work. The request for the maintenance preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm the exact condition of the electrical equipment and systems to be maintained.

**846.02 Maintenance of Existing Lighting Systems.** Existing lighting systems shall be defined as any permanent or temporary lighting system or part of a permanent or temporary lighting system in service prior to the contract that may be affected by the work of the contract. It remains the Contractor's responsibility to visit the site and ascertain the extent of effort required for compliance with these specifications and failure to do so will not be justification for extra payment or reduced responsibilities.

**846.03 Maintenance of Proposed Lighting Systems.** Proposed lighting systems shall be defined as any lighting system or part of a lighting system which is to be constructed under the contract.

**846.04 Extent of Maintenance.**

- (a) Partial Maintenance. Unless otherwise indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work, the Contractor needs only to maintain the affected circuits. The affected circuits shall be isolated by means of in-line waterproof fuse holders as specified elsewhere and as approved by the Engineer.
- (b) Full Maintenance. If the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work, the Contractor shall maintain the entire controller and all associated circuits.

**846.05 Maintenance Responsibility.** The Contractor shall be fully responsible for maintenance of all existing and proposed lighting systems under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, Contractor operations, or other means. The potential cost of replacing or repairing any malfunctioning or damaged equipment shall be included in the bid price of this item and will not be paid for separately.

The Contractor's responsibility shall include the maintenance of lighting units (including sign lighting), cable runs and lighting controls. In the case of a pole knockdown or sign light damage caused by normal vehicular traffic, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the Engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the Engineer. Uncorrected deficiencies may be designated by the Engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the Contractor will be allowed to perform corrective action on specific lighting system equipment.

INCIDENT OR PROBLEM	SERVICE RESPONSE TIME	SERVICE RESTORATION TIME	PERMANENT REPAIR TIME
Control cabinet out	1 hour	4 hours	7 Calendar days
Hanging mast arm	1 hour to clear	na	7 Calendar days
Radio problem	1 hour	4 hours	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	na
Circuit out – Cable trouble	1 hour	24 hours	21Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	na
Outage of 75% of lights on one tower	1 hour	4 hours	na
Outage of light nearest Plazas and gores	1 hour	4 hours	na
Outage (single or multiple) found on night outage survey or reported to Tollway	Na	na	7 Calendar days
Navigation light outage	Na	na	24 hours

Service Response Time -- amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.

Service Restoration Time – amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)

Permanent Repair Time – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

#### **846.06 Liquidated Damages**

- (a) Non-Compliance. The Contractor will be subject to liquidated damages of \$500.00 per incident, per day, to be deducted from next pay estimate due Contractor, for each occurrence when Engineer determines that Contractor or his Subcontractor is not in full compliance with this Article.
- (b) Failure to Respond. The Contractor is required to respond in accordance with the requirements of Article 846.05. Failure by Contractor to so respond shall be grounds for liquidated damages of \$500.00 for each and every occurrence, to be deducted from next pay estimate due Contractor.

In addition, the Tollway reserves the right to assign any work not completed within this timeframe to the Tollway Electrical Maintenance Department. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. These costs will be deducted from next pay estimate due Contractor.

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

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

**846.07 Operation of Lighting.** The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods. The Contractor shall demonstrate to the satisfaction of the Engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

**846.08 Maintenance Transfer and Preconstruction Inspection.** Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall request a maintenance transfer and preconstruction site inspection, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance transfer and preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

- (a) Establish the procedures for formal transfer of maintenance responsibility required for the construction period.
- (b) Establish the approximate location and operating condition of lighting and/or traffic control systems which may be affected by the work.
- (c) Establish the condition of lighting and/or traffic control systems which may be affected by the work.

The Contractor shall conduct an inventory of all existing electrical system equipment within the project limits, which may be affected by the work, making note of any parts which are found broken or missing, defective or malfunctioning. Megger and load readings shall be taken for all existing circuits which will remain in place or be modified. If a circuit is to be taken out in its entirety, then readings do not have to be taken. The inventory and test data shall be reviewed with and approved by the Engineer and a record of the inventory shall be submitted to the Engineer for the record. Without such a record, all systems transferred to the Contractor for maintenance during construction shall be returned at the end of construction in complete, fully operating condition.

**846.09 Marking of Existing Cable Systems.** The party responsible for maintenance of any existing lighting and/or traffic control systems at the project site will, at the Contractor's request, mark and/or stake, once per location, all underground cable routes owned or maintained by the respective party. A project may involve multiple "locations" where separated electrical systems are involved.

The markings shall be taken to have a horizontal tolerance of at least one foot to either side. The request for the cable locations and marking shall be made in sufficient time in advance of the request for the maintenance transfer and preconstruction inspection to allow the markings to be completed before the preconstruction site inspection date.

The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of his work, as specified elsewhere herein.

NOTE THAT THE CONTRACTOR SHALL BE ENTITLED TO ONLY ONE REQUEST FOR LOCATION MARKING OF EXISTING SYSTEMS AND THAT MULTIPLE REQUESTS MAY ONLY BE HONORED AT THE CONTRACTOR'S EXPENSE. NO LOCATES WILL BE MADE AFTER MAINTENANCE IS TRANSFERRED, UNLESS IT IS AT THE CONTRACTOR'S EXPENSE.

**846.10 Removal of Temporary Lighting.** Disconnection and removal of all temporary lighting systems shall be in accordance with the requirements of Article 841. The cost for the removal of all temporary lighting equipment shall be considered as included in the cost for MAINTAIN LIGHTING SYSTEM.

**846.11 Basis of Payment.** Maintenance of lighting systems shall be paid for at the Contract lump sum price for MAINTAIN LIGHTING SYSTEM, which shall include all work as described herein.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 1065. PROTECTIVE DEVICES**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 1065 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Revise the last sentence of Article 1065.01(c) to read:

The fuses shall be 5 ampere, Type KTK fuses, as manufactured by Bussman Manufacturing.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 1066. WIRE AND CABLE**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 1066 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Revise the last sentence in Article 1066.01 to read:

The unit duct shall be according to NEC Article 354 and be UL Listed.

Revise the second sentence of the first paragraph of Article 1066.02(a) 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.

Delete the last paragraph of Article 1066.02(a) and replace with the following paragraphs:

The color code for wire and cable used to make up 480 volt, single phase, two wire roadway lighting circuits shall be two yellow for circuit A, two orange for circuit B, and one green for the ground.

Wire and cables normally unavailable from manufacturers in colors, shall be color code-banded with colored adhesive strips or tape where exposed in light pole bases, handholes, junction boxes, pull boxes, control panels and consoles.

Replace Article 1066.02(b) with the following:

(b) Copper Conductors. Conductors shall be uncoated or coated copper.

Uncoated conductors shall be according to ASTM B3, ICEA S-95-658/NEMA WC70, and UL Standard 44. Coated conductors shall be according to ASTM B 33, ASTM B 8, ICEA S-95-658/NEMA WC70 and UL Standard 44.

All conductors shall be stranded. Stranding shall meet ASTM B 8, ICEA S-95-658/NEMA WC70 and UL Standard 44. Uncoated conductors shall meet ASTM B 3, ICEA S-95-658/NEMA WC70 and UL Standard 44.

Revise the first sentence of Article 1066.03(a)(1) to read:

(1) General. Cable insulation designated as XLP shall incorporate cross-linked polyethylene (XLP) insulation as specified and shall meet or exceed the requirements of ICEA S-95-658, NEMA WC70, and UL Standard 44.

Add the following sentence to Article 1066.03(a)(1):

The cable shall be rated 600 volts and shall be UL Listed Type RHH/RHW/USE.  
 Revise the Aerial Electric Cable Properties table of Article 1066.03(a)(3) to read:

Aerial Electric Cable Properties

Phase Conductor				Messenger wire	
Size AWG	Stranding Thickness	Average Insulation Thickness	Minimum Insulation Thickness	Stranding Size AWG	
mm			mils		
6	7	1.1	(45)	6	6/1
4	7	1.1	(45)	4	6/1
2	7	1.1	(45)	2	6/1
1/0	19	1.5	(60)	1/0	6/1
2/0	19	1.5	(60)	2/0	6/1
3/0	19	1.5	(60)	3/0	6/1
4/0	19	1.5	(60)	4/0	6/1

Revise the first paragraph of Article 1066.03(b) to read:

- (b) EPR Insulation. Cable insulation shall incorporate ethylene propylene rubber (EPR) as specified and the insulation shall meet or exceed the requirements of ICEA S-95-658, NEMA Standard Publication No. WC70, and UL Standard 44, as applicable.

Replace Article 1066.04 with the following:

**1066.04 Aerial Cable Assembly.** The aerial cable shall be an assembly of insulated aluminum conductors according to Section 1066.02 and 1066.03. Unless otherwise indicated, the cable assembly shall be composed of three insulated conductors and a steel reinforced bare aluminum conductor (ACSR) to be used as the ground conductor. Unless otherwise indicated, the code word designation of this cable assembly is "Palomino". The steel reinforced aluminum conductor shall conform to ASTM B-232. The cable shall be assembled according to ANSI/ICEA S-76-474.

Revise the second paragraph of Article 1066.05 to read:

The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing.

Replace Article 1066.08 with the following:

**1066.08. Electrical Tape.** Electrical tape shall be all weather vinyl plastic tape resistant to abrasion, puncture, flame, oil, acids, alkalis, and weathering, conforming to Federal Specification MIL-I-24391, ASTM D1000 and shall be listed under UL 510 Standard. Thickness shall not be less than 8.5 mils (0.215 mm) and width shall not be less than 3/4-inch (20 mm).

Replace Article 1066.09 with the following:

**1066.09 Wire and Cable for Roadway Lighting.**

- (a) Wire and cable used to make up 480 volt, single phase, two wire roadway lighting circuits shall be insulated with single material EPR insulation over the conductor with a minimum average thickness as indicated in the table in Article 1066.03(b) labeled Single Material Insulation Thickness. Cable shall be rated 600 volt, type RHW-2. Cable insulated with composite EPR insulation with a jacket shall not be used.
- (b) Pole wire, wiring to underpass luminaires and wiring to sign luminaires shall be sized No.10, rated 600 volt, type RHW-2, and have copper conductors, stranded in conformance with ASTM B-8. Wire shall be insulated with single material EPR insulation over the conductor with a minimum average thickness as indicated in the table in Article 1066.03(b) labeled Single Material Insulation Thickness.

Color coding of the wire shall be via solid insulation color. The color code for pole wire and wiring for underpass lighting shall be two yellow for circuit A, two orange for circuit B, and green for the ground. Wiring for sign luminaires shall be pairs of yellow or orange wires tagged with a luminaire identifier matching the identifier marked on the ballast.

**Illinois State Toll Highway Authority**

**SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 1067. LUMINAIRE**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 1067 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Revise the second sentence of Article 1067.01(b) to read:

A decal complying to the ANSI standard, shall be factory attached permanently to roadway luminaires.

Add the following to the first paragraph of Article 1067.01(c):

A glass reflector finish may be substituted in place of the above oxide coating. The glass finish shall be chemically bonded to the reflector and shall be flexible, impact resistant, and heat resistant.

Replace Article 1067.01(d) with the following:

- (d) Housing. The luminaire shall be gasketed and sealed, and UL listed for wet locations. The housing shall be fabricated from die cast aluminum or cast aluminum alloy. On aluminum alloys that darken due to atmospheric exposure the finish shall be textured and shall be protected by painting with a suitable lacquer, enamel or other paint. Housings that are painted shall withstand a 1000 hour salt spray test as specified in ASTM B117. The external latches shall be made of stainless steel.

Delete Articles 1067.01(e)(1), 1067.01(e)(2), and 1067.01(e)(3).

Replace Article 1067.01(f) with the following:

- (f) Photometric Data and Testing. The manufacturer's published photometric data for the specified General Electric, Hubbell, and Holophane luminaires is on file with the Tollway. All luminaires supplied under the Contract shall meet or exceed the manufacturer's published photometric data as of March, 1997.

Testing of luminaires shall be required whenever the quantity of luminaires of a given wattage and distribution is 50 or more. For each luminaire types to be so tested, one

luminaire plus one luminaire for each additional 50 luminaires shall be tested, i.e., no test is required if luminaire quantity is 1 to 50; test two luminaires if quantity is 51-100; test three luminaires if quantity is 101-150, etc.

Testing shall be performed by the luminaire manufacturer and shall include both photometric and electrical testing.

(1) Photometric testing shall be performed by the luminaire manufacturer in accordance with IES recommendations and, as a minimum shall yield:

- a. An isofootcandle chart and table.
- b. Candlepower values at 5 degree intervals.
- c. Maximum plane and maximum cone plots of candela. (Not applicable to sign luminaires.)
- d. Candlepower values at 5 degree intervals. (Not applicable to sign and underpass luminaires.)
- e. A coefficient of utilization chart. (Not applicable to sign luminaires.)

(2) Electrical testing shall conform to NEMA and ANSI standards and, as a minimum shall yield:

- a. A complete check of wiring connections.
- b. A ballast dielectric test.
- c. Total ballast losses in watts and percent of input.
- d. A lamp volt-watt trace.
- e. Regulation data.
- f. A starter test.
- g. Lamp current crest factor.
- h. Power factor (minimum over the design range of input voltage at nominal lamp voltage.)
- i. A table of ballast characteristics showing input amperes, watts and power factor, output volts, amperes, watts and lamp crest factor as well as ballast losses over the range of values required to produce the lamp volt-watt trace.

(Note - Above electrical testing is not applicable to sign luminaires.)

The test results shall be reviewed by the manufacturer for conformance to published data. The manufacturer shall certify that the luminaire tested conforms to their published performance data as of March, 1997 which is on file with the Tollway.

Should any of the tested luminaires fail to meet the manufacturers published data all luminaires shall be replaced or corrected to achieve the required performance. If luminaires are replaced, the replacement luminaires shall be tested in accordance with the above requirements. In the case of corrections, the manufacturer shall advise the Tollway of the corrections made and the corrected luminaires shall be retested in accordance with the above requirements. In no case shall the luminaires be shipped by the manufacturer until the Tollway has received written certification from the manufacturer that the tested luminaires are in conformance with published data as required above.

Replace Article 1067.01(g) with the following:

(g) Documentation Requirements. Certified Test Reports shall be supplied as required in Article 1067.01(f) for each shipment. Certified test reports shall include the following identification information:

- (1) Manufacturer's name
- (2) Type of luminaires
- (3) Quantity of luminaires
- (4) A copy of shipping ticket
- (5) Manufacturer's lot number

Replace Article 1067.01(i) with the following:

(i) Preparation for Delivery. Luminaires shall be packaged in accordance with the standard commercial practices in the industry. Each shipping container shall be clearly marked to indicate contents, the manufacturer, date of manufacture, make, model, lamp and ballast types, electrical ratings and purchase order number, and Contract Number.

Add the following paragraph to Article 1067.01:

(j) Manufacturer's Warranty. The manufacturer shall warrant to the Tollway that the factory-installed electrical system inside the luminaires (consisting of the core and coil ballast, starting aid, capacitor, socket, terminal board and wiring) will be free from defects in material and workmanship for four (4) years from the date that the luminaires are put into service. The manufacturer shall also warrant that all other parts of the luminaires will be free from defects in material and workmanship for two (2) years from the date of manufacture. Manufacturer's products shall bear the date of manufacture. Luminaires shall be installed within one year of manufacture.

If any luminaires fail to meet the above warranty, the Tollway shall provide the manufacturer with a written notice of any defect within thirty (30) days after discovery of the defect. The manufacturer shall provide all materials, luminaires, replacement component parts, labor and all incidentals necessary to restore the luminaire to a fully operational, installed condition.

Replace Article 1067.02(a) with the following:

(a) Horizontal Mount.

- (1) General. Each luminaire for roadway lighting shall be a 400 Watt high pressure sodium (HPS), flat lens cutoff "cobra head" type luminaire. The luminaire shall be of the enclosed type for a horizontal burning lamp.

Each luminaire shall consist of a three piece die cast aluminum housing, a reflector, a terminal strip, a bottom lens, a lamp socket, an integral ballast, an integral starting aid, a breathing filter, gasket and other incidental materials to make the luminaire fully operational as specified herein.

The luminaire shall be provided with a leveling surface and shall be capable of being tilted by  $\pm 5$  degrees and rotated to any degree with respect to the supporting arm.

The luminaire shall be designed as to its size, shape and weight so that it does not aggravate the vibration characteristics of the pole or mast arm on which it is mounted and shall be compatible with the entire lighting unit. In addition, the effective projected area of the luminaire shall not exceed 1.1 square feet.

The luminaire shall slip-fit on a 1 1/4" to a 2" pipe arm and shall have a barrier to limit the length of insertion. The luminaire shall be provided with a four bolt anchoring/attachment means capable of being tightened from below with the ballast door in the open position. It shall not be necessary to remove the optical door and lens to mount the luminaire.

- (2) Ballast Assembly. The ballast assembly shall have all components mounted on the die cast ballast door. The ballast assembly shall be easily removable and replaceable. The ballast wiring and lamp socket wiring shall be connected by means of a plug. All connectors shall be removable without the use of tools. It shall not be necessary to open the optical door and lens to remove the ballast assembly.

Ballasts shall be UL listed and in compliance with NEMA and ANSI specifications. Each ballast shall be designed to operate a high pressure sodium lamp, shall be of the same power rating as the lamp, and shall be able to start the lamp and control it continuously for ambient temperatures ranging from: -20°C to +40°C. The insulation shall be Class H or better.

The ballast shall be of the magnetic regulator type with a nominal loss of 70 watts when operated at rated line voltage. Heat-generating components shall be mounted so as to use the portion of the luminaire upon which they are mounted as a heat sink. Capacitors shall be located as far as practicable from the heat-generating components or shall be thermally shielded to limit the case temperature to 90°C.

Transformers and inductors shall be resin-impregnated for protection against moisture. Capacitors shall be metal cased and liquid tight, and shall be provided with pressure sensitive interrupters.

The lamp current crest factor shall not exceed 1.7 for a  $\pm 10$  percent line voltage variation at any lamp voltage, from nominal through life.

The ballast shall be plainly marked as to its operating electrical ratings and rating of the lamp for which it is designed.

- (3) Starter Aid. The starter aid shall be a plug-in type mounted internally on the ballast access door. The starter aid shall be designed to provide the electrical characteristics recommended by the lamp manufacturer for proper starting. The starter aid shall be designed to provide protection to itself in an open or short circuit condition for a minimum period of 12 months without loss of starter aid circuit life. The starter aid shall be installed within the luminaire housing in such a way as to prevent the effects of the environment on the starter aid.
- (4) Optical Assembly. The optical assembly shall consist of an aluminum reflector, a horizontally adjustable porcelain base lamp socket, and a crystal clear heat and impact resistant flat glass lens. The optical assembly shall have a temperature resistant gasketing system. The lens shall be held in such a manner as to allow for its expansion and contraction.
- (5) Gasket and Filtering. The socket-reflector junctions shall be sealed against the entry of moisture, dirt and insects. Gaskets shall be made with a thick, high density dacron felt. Gaskets shall be cemented full perimeter to the reflector seat with no metallic clips or fasteners. There shall be provision for thermal breathing. Other gasket materials must be submitted to the Tollway for approval.

The luminaires shall be equipped with a system for allowing filtered air to enter and leave the optical compartment of the luminaire. The purpose of the filtering system is to remove particulate from the inflowing air preventing their deposit or discoloration of the optical surfaces.

Filter and optical system components shall be of materials which under normal luminaire operating conditions will not deteriorate or chemically change in such a way as to reduce the luminaire dirt depreciation factor.

- (6) Manufacturers. Products manufactured by General Electric or Hubbell will be acceptable.

Replace Article 1067.04 with the following:

**1067.04 Underpass Luminaire.** Underpass luminaires shall be in according to Article 1067.01 and the following.

- (a) General. Luminaires for underpass lighting shall be the enclosed type for a horizontal burning 150 watt high pressure sodium lamp.  
The underpass luminaire shall consist of a die cast aluminum or aluminum alloy housing, a reflector, a refractor, lamp socket, an integral ballast, an integral starting aid, a gasket and other incidental materials to made the underpass luminaire fully operational as specified herein.

- The underpass luminaire shall be complete with all supports, hardware, and appurtenant mounting accessories. The underpass luminaire shall be suitable for lighting a roadway underpass at an approximate mounting height of 16 feet from a position suspended directly above the outside edge of the roadway shoulder or attached to a wall or pier.
- (b) Ballast. The integral ballast shall operate a 150 watt, 55 volt high pressure sodium lamp and provide reliable starting at temperatures as low as -20 degrees F. Ballast shall be UL listed and in compliance with NEMA and ANSI specifications. Ballast shall be high power factor type with Class H insulation. Ballast core, coil and capacitors shall be positioned for maximum heat dissipation.
  - (c) Optical Assembly. The optical assembly shall consist of an aluminum reflector, a prismatic borasilicate glass refractor and porcelain base lamp socket. The optical assembly shall have a temperature resistant gasketing system. The refractor shall be held in such a manner as to allow for its expansion and contraction.
  - (d) Gasket and Filtering. The socket reflector junctions shall be sealed against the entry of moisture, dirt and insects.
  - (e) Refractor. The refractor shall be constructed of molded prismatic borosilicate thermal shock resistant glass. Other refractor material must be submitted to the Authority for approval.
  - (f) Manufacturers. Luminaires shall be as manufactured by Holophane or approved equal.

Replace Article 1067.05 with the following:

**1067.05 Sign Luminaire.** Sign luminaires shall be in according to Article 1067.01 and the following.

- (a) General. Luminaires shall be the enclosed type for a horizontal burning 250 mercury vapor lamp, suitable for lighting expressway guide signs.

Each sign luminaire shall consist of an aluminum housing, a reflector terminal strip, a glass refractor, a lamp socket, a slip fitter and other incidental materials to make the luminaire fully operational as specified herein.

The sign luminaire shall not be equipped with an internal ballast. Ballast shall be remotely mounted.

Each sign luminaire shall be equipped with a slip filter to accept a 1-1/4" conduit and a barrier to limit the length of insertion.

- (b) Ballast. Ballast shall be UL listed and in compliance with NEMA and ANSI specifications. The ballast shall be an outdoor weatherproof, high power factor constant wattage or constant wattage auto-transformer type designed to operate a mercury vapor luminaire of the same power rating as the lamp and it shall be able to start the lamp at -20°C and control it continuously for ambient temperatures ranging from -20°C to +40°C. Insulation shall be Class H or better.

Each ballast shall meet the following requirements:

- (1) It shall be suitable for 60 Hz 480  $\pm$  10% volt line operation as indicated in the Plans.
- (2) It shall regulate the output power to 5% for input voltage fluctuations of 475  $\pm$  5% volts.
- (3) It shall have an overall power factor of at least 0.9 when operated under rated lamp load.
- (4) The total ballast losses shall not exceed 20% of nominal rated load.
- (5) It shall operate the lamp without adversely affecting the lamp life and performance.
- (6) It shall withstand a 2,500 volt dielectric test between core and windings.
- (7) It shall not submit the lamp to a crest factor exceeding 1.8.

Ballasts shall be the high intensity discharge type with a cylindrical metal weatherproof housing, Sola Advance, catalog number 79W3542-001 or approved equal.

One ballast shall be provided for each luminaire. Line operating amperage shall be 0.62 amperes at 480 volts.

- (c) Optical Assembly. The optical assembly shall consist of an aluminum reflector, a porcelain base lamp socket, and a heat and impact resistant prismatic borosilicate glass refractor.
- (d) Gasket and Filtering. The socket reflector junctions shall be sealed against the entry of moisture, dirt and insects.
- (e) Manufacturers. Luminaires shall be as manufactured by Holophane or approved equal.

Add the following paragraph to Article 1067.06:

(f) Mercury Vapor Lamps.

- (1) Mercury vapor lamps shall be compatible for use with luminaires equipped with ANSI specification ballasts.
- (2) The lamps shall have a correlated color temperature of 3,900° Kelvin.
- (3) The mercury vapor lamps shall meet the following minimum operating characteristics and published ratings:

Lamp watts, rated 250  
ANSI Code Designation H37KC-R250/DX  
Volts 130  
Life (10 hr. burning cycle) – hrs. 24,000  
Lumen Output:  
Initial 12,100  
Mean 9,800  
Lamp survival @ 12,000 hrs. 90%

Add the following Article to Section 1067:

**1067.08 Incandescent Luminaires.**

(a) Sign Beacon Luminaire.

- (1) Overhead, ground mount and bridge mount sign beacon luminaires shall be 12" round face, amber polycarbonate lens, signal light comprised of undrilled, yellow painted, corrosion resistant, die cast aluminum housing, alzak reflector, square door lens holder, terminal block and tunnel type visor. Reflector, lens and door shall be silicone gasketed. Socket shall be rotatable and pre-focused. Lens shall be multi-prismed amber colored. Unit shall be 250 volt rated.
- (2) Manufacturer. The beacon signal shall be as manufactured by Econolite, Catalog No. TA12C1APS0N or approved equal.

(b) Barrier Warning Light.

- (1) Barrier warning lights shall be 8" round face, amber polycarbonate lens, signal light comprised of undrilled, yellow painted, corrosion resistant, die cast aluminum housing, alzak reflector, square door lens holder, terminal block and tunnel type visor. Reflector, lens and door shall be silicone gasketed. Socket shall be rotatable and pre-focused. Lens shall be multi-prismed amber colored. Unit shall be 250 volt rated.
- (2) Manufacturer. The barrier warning lights shall be as manufactured by Econolite, Catalog No. EA12C1APS0N or approved equal.

(c) Lamps. Incandescent lamps shall be clear-traffic signal type, medium base, rated at 116 watts or as indicated in the Plans. The light center length of these lamps shall be 3 inches or as otherwise indicated for correct optic positioning of the light source in the beacon light. The lamp voltage shall be as indicated in the Plans.

**Illinois State Toll Highway Authority  
SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 1076. WIRE AND CABLE**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 1076 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Delete Articles 1076.02 (c)(3) and 1076.02 (c)(4).

Delete the last two sentences of Article 1076.02 (c)(7).

**Illinois State Toll Highway Authority  
SUPPLEMENTAL SPECIFICATION  
FOR**

**SECTION 1088. WIREWAY AND CONDUIT SYSTEM**

**Issued January 1, 2007**

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 1088 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 shall be modified as follows:

Revise the second paragraph of Article 1088.01(a) to read:

Conduit fittings shall be cast metal bodies and covers and shall meet UL Standard 514. Elbows and nipples shall conform to the specifications for conduit. All fittings and couplings for rigid conduit shall be of the threaded type.

Revise Article 1088.01(a)(1) to read:

(1) Rigid Steel Conduit. Rigid steel conduit shall be galvanized and manufactured according to UL Standard 6 and ANSI Standard C 80.1.

Replace the first paragraph of Article 1088.01(a)(3) with the following:

- (3) PVC Coated Steel Conduit. The conduit prior to coating shall meet the requirements for rigid steel conduit. PVC coated rigid steel conduit shall meet UL Standard 6. The PVC coating must have been investigated by UL as providing the primary corrosion protection for the rigid steel conduit. Ferrous fittings for general service locations shall be UL Listed with PVC as the primary corrosion protection. Hazardous location fittings, prior to plastic coating shall be UL listed.

Add the following paragraphs to Article 1088.01(a)(3):

In addition to the exterior PVC bond test described above the PVC conduit shall pass the following additional tests:

a. Boil Test:

Acceptable conduit coating bonds (exterior and interior) shall be confirmed if there is no disbondment after a minimum average of 200 hours in boiling water or exposure to steam vapor at one atmosphere. The RN1 Bond Test and the Standard Method for Measuring Adhesion by Tape Test shall be utilized.

Exterior Adhesion. In accordance with ASTM D870, a 6" length of conduit test specimen shall be placed in boiling water. The specimen shall be periodically removed, cooled to ambient temperature and immediately tested according to the bond test (RN1). When the PVC coating separates from the substrate, the boil time to failure in hours shall be recorded.

Interior Adhesion. In accordance with ASTM D3359, a 6" conduit test specimen shall be cut in half longitudinally and placed in boiling water or directly above boiling water with the urethane surface facing down. The specimen shall be periodically removed, cooled to ambient temperature and tested in accordance with the Standard Method of Adhesion by Tape Test (ASTM D3359). When the coating disbonds, the time to failure in hours shall be recorded.

b. Heat/Humidity Test:

Acceptable conduit coating bonds shall be confirmed by a minimum average of 30 days in the Heat and Humidity Test. The RN1 Bond Test and the Standard Method for Measuring Adhesion by Tape Test shall be utilized.

Exterior Adhesion. In accordance with ASTM D1151, D1735, D2247 and D4585, conduit specimens shall be placed in a heat and humidity environment where the temperature is maintained at 150°F (66°C) and 95% relative humidity. The specimens shall be periodically removed and a bond test (RN1) performed. When the PVC coating separates from the substrate, the exposure time to failure in days shall be recorded.

Interior Adhesion. In accordance with ASTM D3359, conduit specimens shall be placed in a heat and humidity environment where the temperature is maintained at 150°F (66°C) and 95% relative humidity. When the coating disbonds, the time to failure in hours shall be recorded.

Replace the first paragraph of Article 1088.01(b) with the following:

- (b) Rigid Nonmetallic Conduit. The conduit and elbows shall be manufactured from polyvinyl chloride complying with ASTM D 1784 and with all applicable requirements of NEMA TC2, UL Standard 651 and NEC Article 352.

Replace Article 1088.01(c) with the following:

- (c) Coilable Nonmetallic Conduit. Coilable Nonmetallic Conduit (polyethylene duct) shall be a UL Listed plastic duct which is intended for underground use and can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance.

The duct shall be in accordance with the requirements of ASTM F2160.

The duct shall be composed of black high density polyethylene meeting the requirements of ASTM D 3350, Class C, Grade PE30.

Duct dimensions shall conform to the following table within the manufacturing tolerances set forth in ASTM F2160. Duct sizes through 3" shall conform to Tables 3 and 8 for Schedule 40 PE conduit. 4" duct shall conform to Tables 2 and 5 for SDR 13.5 PE conduit.

Nom. Duct Diameter		Nom. Outside Diameter		Min. Wall Thickness	
mm	In	mm	in	mm	in
27	1	33.4	1.315	3.4	0.133
35	1.25	42.2	1.660	3.6	0.140
41	1.5	48.3	1.900	3.7	0.145
53	2.0	60.3	2.375	3.9	0.154
76	3.0	88.9	3.50	5.5	0.216
102	4.0	114.3	4.50	8.5	0.333

Performance Tests. Polyethylene Duct testing procedures and test results shall meet the requirements of ASTM F2160. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the duct.

Coilable nonmetallic conduit 2" and larger shall be machine straightened to remove the longitudinal curvature and ovality caused by coiling the conduit onto reels prior to installing in trench, encasing in concrete or embedding in structure. The straightening shall not deform the cross-section of the conduit such that any two

measured outside diameters, each from any location and at any orientation around the longitudinal axis along the conduit differ by more than 0.25 inches. The longitudinal axis of the straightened conduit shall not deviate by more than 0.25 inches per foot from a straight line. The recommendations of the straightening machine manufacturer regarding ambient temperature shall be followed.

Revise the fourth paragraph of Article 1088.04 to read:

Junction box covers shall be attached to the box with captive un-slotted hex head screws unless otherwise specified. For boxes mounted on structures, the cover shall be furnished with a retaining chain.

Revise the third sentence of the first paragraph of Article 1088.05 (c) to read:

The cover shall contain a cast-in-place legend "TOLLWAY", "TRAFFIC SIGNALS", or "IDOT LIGHTING" when used for Tollway lighting or communication work, traffic signals or IDOT lighting, respectively.

Revise the first sentence of the second paragraph of Article 1088.06 to read:

The outside of the cover shall contain a recessed ring or handle for lifting and a cast-in-place legend "TOLLWAY", "TRAFFIC SIGNALS", or "IDOT LIGHTING" when used for Tollway lighting or communication work, traffic signals or IDOT lighting, respectively.

## **SETTLEMENT WAITING PERIOD**

Station 451+00 to Station 453+50

A waiting period of 32 days is required after the completion of the embankment construction and placement of the Aggregate Subgrade, 12 inches prior to the beginning of paving operations.

## **END SECTIONS**

Description: End Sections for drainage pipes shall be constructed in accordance with Section 542 of the Standard Specifications and the Standard Drawings and/ or Special Details included with the Plans.

All reference in the Plans and Special Provisions to Sloped Headwalls, Type III shall be interpreted to mean End Sections.

Method of Measurement: End Sections of the size specified will be measured for payment by each.

Basis of Payment: This work will be paid for at the contract unit price per each for END SECTIONS of the size specified.

## **EMBANKMENT I**

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

Material. All material shall be approved by the District Geotechnical Engineer. The proposed material must meet the following requirements.

- a) The laboratory Standard Dry Density shall be a minimum of 1450 kg/cu m (90 lb/cu ft) when determined in accordance with AASHTO T 99.
- b) The organic content shall be less than ten percent determined in accordance with AASHTO designation T 194 (Wet Combustion).
- c) Soils which demonstrate the following properties should be restricted to the interior of the embankment and shall be covered on both the sides and top of the embankment by a minimum of 900 mm (3 ft) of soil not considered detrimental in terms of erosion potential or excess volume change.
  - 1) A grain size distribution with less than 35 percent passing the number 75 um (#200) sieve.
  - 2) A plasticity index (PI) of less than 11.
  - 3) A liquid limit (LL) in excess of 45.
- d) Reclaimed asphalt shall not be used within the ground water table or as a fill if ground water is present.

## **CONSTRUCTION REQUIREMENTS**

Samples. Embankment material shall be sampled, tested, and approved before use. The contractor shall identify embankment sources, and provide equipment as the Engineer requires, for the collection of samples from those sources. Samples will be furnished to the Geotechnical Engineer a minimum of three weeks prior to use in order that laboratory tests for approval and compaction can be performed. Embankment material placement cannot begin until tests are completed and approval given.

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

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

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

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

## **EMBANKMENT STABILITY**

Description: This work shall be according to section 205 of the Standard Specifications except for the following. Wherever the final embankment height is 15 ft (4.6 m) or greater, the entire height of compacted embankment material must demonstrate an unconfined compressive strength of 1 tsf (100 kPa) or greater.

Inspection: Embankment stability will be measured with a Dynamic Cone Penetrometer (DCP) in accordance with the test method in the IDOT Geotechnical Manual. The penetration rate must be equal or less than 1.6 in (40 mm) per blow.

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

## **PERMANENT STEEL SHEET PILING**

Effective: December 15, 1993

Revised: January 1, 2007

Description. This work shall consist of furnishing and installing the permanent sheet piling to the limits and tolerances shown on the plans according to Section 512 of the Standard Specifications.

Material. The sheet piling shall be made of steel and shall be new material. The sheeting shall have a minimum yield strength of 38.5 ksi (265 MPa) unless otherwise specified. The sheeting shall be identifiable and in good condition free of bends and other structural defects. The Contractor shall furnish a copy of the published sheet pile section properties to the Engineer for verification purposes. The Engineer's approval will be required prior to driving any sheeting. All driven sheeting not approved by the Engineer shall be removed at the Contractor's expense.

The Contractor shall select from the following table, a sheet pile section to be used for each wall section with an "effective section modulus" equal to or larger than that specified on the plans.

SHEET PILE SECTION DESIGNATION	EFFECTIVE SECTION MODULUS * in <sup>3</sup> /ft. (10 <sup>3</sup> mm <sup>3</sup> /m)	SHEET PILE SECTION DESIGNATION	EFFECTIVE SECTION MODULUS * in <sup>3</sup> /ft. (10 <sup>3</sup> mm <sup>3</sup> /m)
SZ-10	3.5 (189)	SZ-22	13.5 (728)
SZ-11	4.0 (216)	SPZ-23.5	13.6 (729)
SZ-12	5.1 (277)	PZ-22	15.3 (823)
SZ-14	6.2 (331)	SZ-222	18.0 (968)
CZ-67	6.5 (349)	SZ-24	19.9 (1072)
SZ-15	6.6 (356)	CZ-114RD	20.1 (1082)
CZ-72	7.3 (393)	PZC-13	20.4 (1098)
SZ-14.5	8.3 (445)	SZ-25	20.5 (1105)
SPZ-16	8.4 (452)	PLZ-23	20.7 (1113)
CZ-84	8.9 (480)	SPZ-23	21.4 (1153)
CZ-95RD	10.2 (550)	CZ-114	21.7 (1165)
CZ-95	10.5 (566)	SZ-27	22.4 (1206)
SZ-18	10.9 (588)	PLZ-25	23.0 (1236)
SPZ-19.5	11.2 (604)	SPZ-26	24.4 (1311)
CZ-101	11.3 (609)	CZ-128	24.8 (1332)
Z-20	12.0 (648)	PZ-27	25.5 (1371)
CZ-107	12.1 (653)	CZ-141	27.9 (1497)
SZ-21	12.5 (674)	PZC-18	28.3 (1520)
SPZ-22	12.7 (682)	CZ-148	29.4 (1581)
CZ-113	12.9 (695)	PZ-35	43.6 (2344)
		PZ-40	54.6 (2932)

\* Effective Section Modulus is computed by taking the effects of corrosion loss allowances and the Hartman reduction factor.

The selection of the sheet pile section shall not relieve the Contractor of the responsibility to satisfy all details including minimum clearances, cover, embedments, reinforcement, shear stud locations, interlocking, and field cutting. Any modifications of the plans to accommodate the Contractor's selection shall be paid for by the Contractor and subject to the approval of the Engineer.

Construction. The Contractor shall verify locations of all underground utilities before driving any sheet piling. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department. The Contractor shall be responsible for determining the appropriate equipment necessary to drive the sheeting to the tip elevation(s) specified on the plans or according to the Contractor's approved design. The sheet piling shall be driven, as a minimum, to the tip elevation(s) specified, prior to commencing any related construction. If unable to reach the minimum tip elevation, the adequacy of the sheet piling design will require re-evaluation by the Department prior to allowing construction adjacent to the sheet piling in question.

Method of Measurement. This work will be measured in place in square feet (square meters). Sheet piling associated with other work in this contract or for permanent sheet piling that is cut off or driven beyond those dimensions shown on the plans will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for PERMANENT STEEL SHEET PILING at the location shown on the plans.

### **CLEANING AND PAINTING NEW METAL STRUCTURES**

Effective Date: September 13, 1994

Revised Date: January 1, 2007

Description. The material and construction requirements that apply to cleaning and painting new structural steel shall be according to the applicable portion of Sections 506 of the Standard Specifications except as modified herein. The three coat paint system shall be the system as specified on the plans and as defined herein.

Materials. All materials to be used on an individual structure shall be produced by the same manufacturer. The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material must be tested and approved by that bureau before use.

The paint materials shall meet the requirements of the following articles of the Standard Specification:

<u>Item</u>	<u>Article</u>
(a) Inorganic Zinc-Rich Primer	1008.02
(b) Waterborne Acrylic	1008.04
(c) Aluminum Epoxy Mastic	1008.03
(d) Organic Zinc-Rich Primer (Note 1)	
(e) Epoxy Intermediate (Note 1)	
(f) Aliphatic Urethane (Note 1)	

Note 1: These material requirements shall be according to the Special Provision for the Organic Zinc-Rich Paint System.

Submittals. At least 30 days prior to beginning field painting, the Contractor shall submit for the Engineer's review and acceptance, the following applicable plans, certifications and information for completing the field work. Field painting can not proceed until the submittals are accepted by the Engineer. Qualifications, certifications and QC plans for shop cleaning and painting shall be available for review by the QA Inspector.

- a) Contractor/Personnel Qualifications. Except for miscellaneous steel items such as bearings, side retainers, expansion joint devices, and other items allowed by the Engineer, or unless stated otherwise in the contract, the shop painting Contractors shall be certified to perform the work as follows: the shop painting Contractor shall possess AISC Sophisticated Paint Endorsement or SSPC-QP3 certification. Evidence of current qualifications shall be provided.

Personnel managing the shop and field Quality Control program(s) for this work shall possess a minimum classification as a National Association of Corrosion Engineers (NACE) Coating Inspector Technician, or shall provide evidence of successful inspection of 3 projects of similar or greater complexity and scope that have been completed in the last 2 years. Copies of the certification and/or experience shall be provided.

The personnel performing the QC tests for this work shall be trained in coatings inspection and the use of the testing instruments. Documentation of training shall be provided.

- b) Quality Control (QC) Program. The shop and field QC Programs shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings. The field program shall incorporate the IDOT Quality Control Daily Report form, as supplied by the Engineer.
- c) Field Cleaning and Painting Inspection Access Plan. The inspection access plan for use by Contractor QC personnel for ongoing inspections and by the Engineer during Quality Assurance (QA) observations.
- d) Surface Preparation/Painting Plan. The surface preparation/painting plan shall include the methods of surface preparation and type of equipment to be utilized for solvent cleaning, abrasive blast cleaning, washing, and power tool cleaning. The plan shall include the manufacturer's names of the materials that will be used, including Product Data Sheets and Material Safety Data Sheets (MSDS).

A letter or written instructions from the coating manufacturer shall be included, indicating the required drying time for each coat at the minimum, normal, and maximum application temperatures before the coating can be exposed to temperatures or moisture conditions that are outside of the published application parameters.

Field Quality Control (QC) Inspections. The Contractor shall perform first line, in process QC inspections of each phase of the work. The Contractor shall implement the submitted and accepted QC Program to insure that the work accomplished complies with these specifications. The Contractor shall use the IDOT Quality Control Daily Report form supplied by the Engineer to record the results of quality control tests. The completed reports shall be turned into the Engineer before work resumes the following day.

The Contractor shall have available at the shop or on the field site, all of the necessary inspection and testing equipment. The equipment shall be available for the Engineer's use when requested.

Field Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all phases of the work. The Engineer's observations in no way relieve the Contractor of the responsibility to provide all necessary daily QC inspections of his/her own and to comply with all requirements of this Specification.

The Engineer has the right to reject any work that was performed without adequate provision for QA observations.

The Engineer will issue a Non-Conformance Report when cleaning and painting work is found to be in violation of the specification requirements, and is not corrected to bring it into compliance before proceeding with the next phase of work.

**Inspection Access and Lighting.** The Contractor shall facilitate the Engineer's observations as required, including allowing ample time to view the work. The Contractor shall furnish, erect and move scaffolding or other mechanical equipment to permit close observation of all surfaces to be cleaned and painted. This equipment shall be provided during all phases of the work. Examples of acceptable access structures include:

Mechanical lifting equipment, such as, scissor trucks, hydraulic booms, etc.  
Platforms suspended from the structure comprised of trusses or other stiff supporting members and including rails and kick boards.  
Simple catenary supports are permitted only if independent life lines for attaching a fall arrest system according to Occupational Safety and Health Administration (OSHA) regulations are provided.

When the surface to be inspected is more than 6 ft. (1.8 m) above the ground or water surface, the Contractor shall provide the Engineer with a safety harness and a lifeline according to OSHA regulations. The lifeline and attachment shall not direct the fall into oncoming traffic. The Contractor shall provide a method of attaching the lifeline to the structure independent of the inspection facility or any support of the platform. When the inspection facility is more than 2 1/2 ft. (800 mm) above the ground, the Contractor shall provide an approved means of access onto the platform.

The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 30 foot candles (325 LUX). Illumination for cleaning and painting, including the working platforms, access, and entryways shall be at least 20 foot candles (215 LUX).

**Construction Requirements.** The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Painted surfaces damaged by any Contractor's operation shall be removed and repainted, as directed by the Engineer, at the Contractor's expense.

The Contractor shall comply with the provisions of the Illinois Environmental Protection Act. Paint drips, spills, and overspray are not permitted to escape into the air or onto any other surfaces or surrounding property not intended to be painted. Containment shall be used to control paint drips, spills, and overspray, and shall be dropped and all equipment secured when sustained wind speeds of 40 mph (64 kph) or greater occur, unless the containment design necessitates action at lower wind speeds. The contractor shall evaluate project-specific conditions to determine the specific type and extent of containment needed to control the paint

emissions and shall submit a plan for containing or controlling paint debris (droplets, spills, overspray, etc.) to the Engineer for approval prior to starting the work. Approval shall not relieve the Contractor of their ultimate responsibility for controlling paint debris from escaping the work zone.

Surface and Weather Conditions. Surfaces to be painted after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt, or moisture does not come in contact with surfaces cleaned or painted that day.

The surface temperature shall be at least 5°F (3°C) above the dew point during final surface preparation operations. The paint manufacturers' published literature shall be followed for specific temperature, dew point, and humidity restrictions during the application of each coat.

The Contractor shall monitor temperature, dew point, and humidity every 4 hours during surface preparation and coating application in the specific areas where the work is being performed. The frequency of monitoring shall increase if weather conditions are changing. The Engineer has the right to reject any work that was performed under unfavorable weather conditions. Rejected work shall be removed, recleaned, and repainted at the Contractor's expense.

Seasonal Restrictions on Field Cleaning and Painting. Field cleaning and painting work shall be accomplished between April 15 and October 31 unless authorized otherwise by the Engineer in writing.

**Inorganic Zinc-rich/ Waterborne Acrylic Paint system.** This system shall be for shop and field application of the coating system, shop application of the intermediate and top coats will not be allowed.

In the shop, all structural steel designated to be painted shall be given one coat of inorganic zinc rich primer. In the field, before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 1000 psi (7 MPa) and 5000 psi (34 MPa) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3 and spot primed with aluminum epoxy mastic. The structural steel shall then receive one full intermediate coat and one full topcoat of waterborne acrylic paint.

- a) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 40 mph (64 kph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.
- b) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:
  - Zinc Primer: 3 mils (75 microns) min., 6 mils (150 microns) max.
  - Epoxy Mastic: 5 mils (125 microns) min., 7 mils (180 microns) max.

Intermediate Coat: 2 mils (50 microns) min., 4 mils (100 microns) max.  
Topcoat: 2 mils (50 microns) min., 4 mils (100 microns) max.

The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 7 and 14 mils (180 and 355 microns).

- c) The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.
- d) Damage to the paint system shall be spot cleaned using SSPC-SP3. The cleaned areas shall be spot painted with a penetrating sealer as recommended by the manufacturer, which shall overlap onto the existing topcoat. Then the aluminum epoxy mastic shall be spot applied not to go beyond the area painted with the sealer. The acrylic intermediate and topcoat shall be spot applied to the mastic with at least a 6 inch (150 mm) overlap onto the existing topcoat.

**Organic Zinc-Rich/ Epoxy/ Urethane Paint System.** This system shall be for full shop application of the coating system, all contact surfaces shall be masked off prior to application of the intermediate and top coats.

Additional Surface Preparation. In addition to the requirements of Section 3.2.9 of the AASHTO/AWS D1.5/D1.5:2002 Bridge Welding Code (breaking thermal cut corners of stress carrying members), rolled and thermal cut corners to be painted with organic zinc primer shall be broken if they are sharper than a 1/16 in. (1.5 mm) radius. Corners shall be broken by a single pass of a grinder or other suitable device at a 45 degree angle to each adjoining surface prior to final blast cleaning, so the resulting corner approximates a 1/16 in. (1.5 mm) or larger radius after blasting. Surface anomalies (burrs, fins, deformations) shall also be treated to meet this criteria before priming.

In the shop, all structural steel designated to be painted shall be given one coat of organic zinc rich primer. Before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 1000 psi (7 MPa) and 5000 psi (34 MPa) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3, and the structural steel shall then receive one full intermediate coat of epoxy and one full topcoat of aliphatic urethane.

- (a) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 40 mph (64 kph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.

- (b) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:  
Organic Zinc-Rich Primer: 3 mils (75 microns) min., 5 mils (125 microns) max.  
Aluminum Epoxy Mastic: 5 mils (125 microns) min., 7 mils (180 microns) max.  
Epoxy Intermediate Coat: 3 mils (75 microns) min., 6 mils (150 microns) max.  
Aliphatic Urethane Top Coat: 2.5 mils (65 microns) min., 4 mils (100 microns) max.
- (c) The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 8.5 and 15 mils (215 and 375 microns).
- (d) When specified on the plans or as requested by the Contractor, and approved by the Engineer, the epoxy intermediate and aliphatic urethane top coats shall be applied in the shop. All faying surfaces of field connections shall be masked off after priming and shall not receive the intermediate or top coats in the shop. The intermediate and top coats for field connections shall be applied, in the field, after erection of the structural steel is completed. The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.
- (e) Erection and handling damage to the shop applied system shall be spot cleaned using SSPC-SP3. The surrounding coating at each repair location shall be feathered for a minimum distance of 1 1/2 in. (40 mm) to achieve a smooth transition between the prepared areas and the existing coating. The existing coating in the feathered area shall be roughened to insure proper adhesion of the repair coats. The areas cleaned to bare metal shall be spot painted with aluminum epoxy mastic. The intermediate and finish coat shall be spot applied to with at least a 6 inch (150 mm) overlap onto the existing finish coat.

**Aluminum Epoxy Mastic/ Waterborne Acrylic Paint system.** This system shall be for shop or field application of the entire coating system.

Before priming with aluminum epoxy mastic the steel the surfaces to be primed shall be prepared according to SSPC SP6 for Commercial Blast Cleaning. In the field, before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 1000 psi (7 MPa) and 5000 psi (34 MPa) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3 and spot primed with aluminum epoxy mastic. The structural steel shall then receive one full intermediate coat of aluminum epoxy mastic and one full topcoat of waterborne acrylic paint.

- d) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 40 mph (64 kph) or greater occur. When the protective

coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.

- e) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:  
Epoxy Mastic Primer: 5 mils (125 microns) min., 7 mils (180 microns) max.  
Epoxy Mastic Intermediate Coat: 5 mils (125 microns) min., 7 mils (180 microns) max.

Acrylic Topcoat: 2 mils (50 microns) min., 4 mils (100 microns) max.

The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 12 and 18 mils (300 and 460 microns).

- f) The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.
- d) Damage to the paint system shall be spot cleaned using SSPC-SP3. The cleaned areas shall be spot painted with a penetrating sealer as recommended by the manufacturer, which shall overlap onto the existing topcoat. Then the aluminum epoxy mastic shall be spot applied not to go beyond the area painted with the sealer. The acrylic topcoat shall be spot applied to the mastic with at least a 6 inch (150 mm) overlap onto the existing topcoat.

The paint manufacturer's product data sheets shall be available for QA review in the shop and submitted to the Engineer prior to start of field work and the requirements as outlined in the data sheets shall be followed.

#### Special Instructions.

Painting Date/System Code. At the completion of the work, the Contractor shall stencil in contrasting color paint the date of painting the bridge, the painting Contractors name, and the paint type code from the Structure Information and Procedure Manual for the system used. The letters shall be capitals, not less than 2 in. (50 mm) and not more than 3 in. (75 mm) in height.

The stencil shall contain the following wording "PAINTED BY (insert the name of the painting Contractor)" and shall show the month and year in which the painting was completed, followed by "CODE S" for the Inorganic Zinc/ Acrylic System, "CODE X" for the Organic Zinc/ Epoxy/ Urethane System, "CODE AB" for the Organic Zinc/ Epoxy/ Urethane System (shop applied), and "CODE U" for the Aluminum Epoxy Mastic/ Acrylic System all stenciled on successive lines. This information shall be stenciled on the cover plate of a truss end post near the top of the railing, or on the outside face of an outside stringer near both ends of the bridge facing traffic, or at some equally visible surface designated by the Engineer.

Method of Measurement. Shop cleaning and painting new structures will not be measured for payment. Field cleaning and painting will not be measured for payment except when performed under a contract that contains a separate pay item for this work.

Basis of Payment. This work will be paid for according to Article 506.07.

### **Temporary Sheet Piling**

Effective: September 2, 1994

Revised: January 1, 2007

Description: This work shall consist of furnishing, driving, adjusting for stage construction when required and subsequent removal of the sheet piling according to the dimensions and details shown on the plans and according to the applicable portions of Section 512 of the Standard Specifications.

This work shall also include furnishing, installing and subsequent removal of all miscellaneous steel shapes, plates and connecting hardware when required to attach the sheeting to an existing substructure unit and/or to facilitate stage construction.

General: The Contractor may propose other means of supporting the sides of the excavation provided they are done so at no extra cost to the department. If the Contractor elects to vary from the design requirements shown on the plans, the revised design calculations and details shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer. This approval will not relieve the Contractor of responsibility for the safety of the excavation. Approval shall be contingent upon acceptance by all involved utilities and/or railroads.

Material: The sheet piling shall be made of steel and may be new or used material, at the option of the Contractor. The sheet piling shall have a minimum section modulus as shown on the plans or in the approved Contractor's alternate design. The sheeting shall have a minimum yield strength of 38.5 ksi (265 MPa) unless otherwise specified. The sheeting, used by the Contractor, shall be identifiable and in good condition free of bends and other structural defects. The Contractor shall furnish a copy of the published sheet pile section properties to the Engineer for verification purposes. The Engineer's approval will be required prior to driving any sheeting. All driven sheeting not approved by the Engineer shall be removed at the Contractor's expense.

Construction: The Contractor shall verify locations of all underground utilities before driving any sheet piling. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department. The Contractor shall be responsible for determining the appropriate equipment necessary to drive the sheeting to the tip elevation(s) specified on the plans or according to the Contractor's approved design. The sheet piling shall be driven, as a minimum, to the tip elevation(s) specified, prior to commencing any related excavation. If unable to reach the minimum tip elevation, the adequacy of the sheet piling design will require re-evaluation by the Department prior to allowing excavation adjacent to the sheet piling in question. The Contractor shall not excavate below the maximum excavation line shown on the plans without the prior permission of the Engineer. The sheet piling shall remain in place until the Engineer determines it is no longer required.

The sheet piling shall be removed and disposed of by the Contractor when directed by the Engineer. When allowed, the Contractor may elect to cut off a portion of the sheet piling leaving the remainder in place. The remaining sheet piling shall be a minimum of 12 in. (300 mm) below the finished grade or as directed by the Engineer. Removed sheet piling shall become the property of the Contractor.

When an obstruction is encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to break up, push aside, or remove the obstruction. An obstruction shall be defined as any object (such as but not limited to, boulders, logs, old foundations etc.) where it's presence was not obvious or specifically noted on the plans prior to bidding, that cannot be driven through or around with normal driving procedures, but requires additional excavation or other procedures to remove or miss the obstruction.

Method of Measurement: The temporary sheet piling will be measured for payment in place in square feet (square meter). Any temporary sheet piling cut off, left in place, or driven to dimensions other than those shown on the contract plans without the written permission of the Engineer, shall not be measured for payment but shall be done at the contractor's expense.

If the Contractor is unable to drive the sheeting to the specified tip elevation(s) and can demonstrate that any further effort to drive it would only result in damaging the sheeting, then the Contractor shall be paid based on the plan quantity of temporary sheeting involved. However, no additional payment will be made for any walers, bracing, or other supplement to the temporary sheet piling, which may be required as a result of the re-evaluation in order to insure the original design intent was met.

Basis of Payment: This work will be paid for at the contract unit price per square foot (square meter) for TEMPORARY SHEET PILING.

Payment for any excavation performed in conjunction with this work will not be included in this item but shall be paid for as specified elsewhere in this contract.

Obstruction mitigation shall be paid for according to Article 109.04 of the Standard Specifications.

## **TEMPORARY SOIL RETENTION SYSTEM**

Effective: December 30, 2002

Revised:: January 1, 2007

Description: This work shall consist of designing, furnishing, installing, adjusting for stage construction when required and subsequent removal of the temporary soil retention system according to the dimensions and details shown on the plans and in the approved design submittal.

General: The temporary soil retention system shall be designed by the Contractor as a minimum, to retain the exposed surface area specified in the plans or as directed by the Engineer.

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

Construction: The Contractor shall verify locations of all underground utilities before installing any of the soil retention system components or commencing any excavation. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department. The soil retention system shall be installed according to the Contractor's approved design, or as directed by the Engineer, prior to commencing any related excavation. If unable to install the temporary soil retention system as specified in the approved design, the Contractor shall have the adequacy of the design re-evaluated. Any reevaluation shall be submitted to the Engineer for approval prior to commencing the excavation adjacent to the area in question. The Contractor shall not excavate below the maximum excavation line shown in the approved design without the prior permission of the Engineer. The temporary soil retention system shall remain in place until the Engineer determines it is no longer required.

The temporary soil retention system shall be removed and disposed of by the Contractor when directed by the Engineer. When allowed, the Contractor may elect to cut off a portion of the temporary soil retention system leaving the remainder in place. The remaining temporary soil retention system shall be removed to a depth which will not interfere with the new construction, and as a minimum, to a depth of 12 in. (300 mm) below the finished grade, or as directed by the Engineer. Removed system components shall become the property of the Contractor.

When an obstruction is encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to break up, push aside, or remove the obstruction. An obstruction shall be defined as any object (such as but not limited to, boulders, logs, old foundations etc.) where its presence was not obvious or specifically noted on the plans prior to bidding, that cannot be driven or installed through or around, with normal driving or installation procedures, but requires additional excavation or other procedures to remove or miss the obstruction.

Method of Measurement: The temporary soil retention system furnished and installed according to the Contractor's approved design or as directed by the Engineer will be measured for payment in place, in square feet (square meters). The area measured shall be the vertical exposed surface area envelope of the excavation supported by temporary soil retention system.

Any temporary soil retention system cut off, left in place, or installed beyond those dimensions shown on the contract plans or the approved contractor's design without the written permission of the Engineer, shall not be measured for payment but shall be done at the contractor's own expense.

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

Payment for any excavation, related solely to the installation and removal of the temporary soil retention system and/or its components, shall not be paid for separately but shall be included in the unit bid price for TEMPORARY SOIL RETENTION SYSTEM. Other excavation, performed in conjunction with this work, will not be included in this item but shall be paid for as specified elsewhere in this contract.

Obstruction mitigation shall be paid for according to Article 109.04 of the Standard Specifications.

### **PIPE UNDERDRAINS FOR STRUCTURES**

Effective: May 17, 2000

Revised: January 1, 2007

Description: This work shall consist of furnishing and installing a pipe underdrain system as shown on the plans, as specified herein, and as directed by the Engineer.

Materials: Materials shall meet the requirements as set forth below:

The perforated pipe drain shall be according to Article 601.02 of the Standard Specifications. Outlet pipes or pipes connecting to a separate storm sewer system shall not be perforated.

The drainage aggregate shall be a combination of one or more of the following gradations, FA1, FA2, CA5, CA7, CA8, CA11, or CA13 thru 15, according to Sections 1003 and 1004 of the Standard Specifications.

The fabric surrounding the drainage aggregate shall be Geotechnical Fabric for French Drains according to Article 1080.05 of the Standard Specifications.

Construction Requirements: All work shall be according to the applicable requirements of Section 601 of the Standard Specifications except as modified below.

The pipe underdrains shall consist of a perforated pipe drain situated at the bottom of an area of drainage aggregate wrapped completely in geotechnical fabric and shall be installed to the lines and gradients as shown on the plans.

Method of Measurement: Pipe Underdrains for Structures shall be measured for payment in feet (meters), in place. Measurement shall be along the centerline of the pipe underdrains. All connectors, outlet pipes, elbows, and all other miscellaneous items shall be included in the measurement. Concrete headwalls shall be included in the cost of Pipe Underdrains for Structures, but shall not be included in the measurement for payment.

Basis of Payment: This work will be paid for at the contract unit price per foot (meter) for PIPE UNDERDRAINS FOR STRUCTURES of the diameter specified,. Furnishing and installation of the drainage aggregate, geotechnical fabric, forming holes in structural elements and any excavation required, will not be paid for separately, but shall be included in the cost of the pipe underdrains for structures.

### **POROUS GRANULAR EMBANKMENT (SPECIAL)**

Effective: September 28, 2005

Revised: January 1, 2007

Description: This work shall consist of furnishing, and placing porous granular embankment (special) material as detailed on the plans, according to Section 207 except as modified herein.

Materials: The gradation of the porous granular material may be any of the following CA 8 thru CA 18, FA 1 thru FA 4, FA 7 thru FA 9, and FA 20 according to Articles 1003 and 1004.

Construction: The porous granular embankment (special) shall be installed according to Section 207, except that it shall be uncompacted.

Basis of Payment: This work will be paid for at the contract unit price per Cubic Yard (Cubic Meter) for POROUS GRANULAR EMBANKMENT (SPECIAL).

**ALKALI-SILICA REACTION FOR CAST-IN-PLACE CONCRETE (BDE)**

Effective: August 1, 2007

Description. This special provision is intended to reduce the risk of a deleterious alkali-silica reaction in concrete exposed to humid or wet conditions. The special provision is not intended or adequate for concrete exposed to potassium acetate, potassium formate, sodium acetate or sodium formate. The special provision shall not apply to the dry environment (humidity less than 60 percent) found inside buildings for residential or commercial occupancy. The special provision shall also not apply to precast products or precast prestressed products.

Aggregate Expansion Values. Each coarse and fine aggregate will be tested by the Department for alkali reaction according to ASTM C 1260. The test will be performed with Type I or II cement having a total equivalent alkali content ( $\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$ ) of 0.90 percent or greater. The Engineer will determine the assigned expansion value for each aggregate, and these values will be made available on the Department's Alkali-Silica Potential Reactivity Rating List. The Engineer may differentiate aggregate based on ledge, production method, gradation number, or other factors. An expansion value of 0.05 percent will be assigned to limestone or dolomite coarse aggregates and 0.03 percent to limestone or dolomite fine aggregates (manufactured stone sand); however the Department reserves the right to perform the ASTM C 1260 test.

Aggregate Groups. Each combination of aggregates used in a mixture will be assigned to an aggregate group. The point at which the coarse aggregate and fine aggregate expansion values intersect in the following table will determine the group.

AGGREGATE GROUPS			
Coarse Aggregate or Coarse Aggregate Blend  ASTM C 1260 Expansion	Fine Aggregate or Fine Aggregate Blend  ASTM C 1260 Expansion		
	$\leq 0.16\%$	$> 0.16\% - 0.27\%$	$> 0.27\%$
$\leq 0.16\%$	Group I	Group II	Group III
$> 0.16\% - 0.27\%$	Group II	Group II	Group III
$> 0.27\%$	Group III	Group III	Group IV

Mixture Options. Based upon the aggregate group, the following mixture options shall be used; however, the Department may prohibit a mixture option if field performance shows a deleterious alkali-silica reaction or Department testing indicates the mixture may experience a deleterious alkali-silica reaction.

- Group I - Mixture options are not applicable. Use any cement or finely divided mineral.
- Group II - Mixture options 1, 2, 3, 4, or 5 shall be used.
- Group III - Mixture options 1, 2 and 3 combined, 4, or 5 shall be used.
- Group IV - Mixture options 1, 2 and 4 combined, or 5 shall be used.

For Class PP-3 concrete the mixture options are not applicable, and any cement may be used with the specified finely divided minerals.

- a) Mixture Option 1. The coarse or fine aggregates shall be blended to place the material in a group that will allow the selected cement or finely divided mineral to be used.

When a coarse or fine aggregate is blended, the weighted expansion value shall be calculated separately for the coarse and fine aggregate as follows:

$$\text{Weighted Expansion Value} = (a/100 \times A) + (b/100 \times B) + (c/100 \times C) + \dots$$

Where: a, b, c... = percentage of aggregate in the blend;  
A, B, C...= expansion value for that aggregate.

- b) Mixture Option 2. A finely divided mineral shall be used as described in 1), 2), 3), or 4) that follow. The replacement ratio is defined as “finely divided mineral:portland cement”.

- 1) Class F Fly Ash. For Class PV, BS, MS, DS, SC, and SI concrete and cement aggregate mixture II (CAM II), Class F fly ash shall replace 15 percent of the portland cement at a minimum replacement ratio of 1.5:1.

- 2) Class C Fly Ash. For Class PV, MS, SC, and SI Concrete, Class C fly ash with 18 percent to less than 26.5 percent calcium oxide content, and less than 2.0 percent loss on ignition, shall replace 20 percent of the portland cement at a minimum replacement ratio of 1:1; or at a minimum replacement ratio of 1.25:1 if the loss on ignition is 2.0 percent or greater. Class C fly ash with less than 18 percent calcium oxide content shall replace 20 percent of the portland cement at a minimum replacement ratio of 1.25:1.

For Class PP-1, RR, BS, and DS concrete and CAM II, Class C fly ash with less than 26.5 percent calcium oxide content shall replace 15 percent of the portland cement at a minimum replacement ratio of 1.5:1.

- 3) Ground Granulated Blast-Furnace Slag. For Class PV, BS, MS, SI, DS, and SC concrete, ground granulated blast-furnace slag shall replace 25 percent of the portland cement at a minimum replacement ratio of 1:1.

For Class PP-1 and RR concrete, ground granulated blast-furnace slag shall replace 15 percent of the portland cement at a minimum replacement ratio of 1.5:1.

For Class PP-2, ground granulated blast-furnace slag shall replace 25 to 30 percent of the portland cement at a minimum replacement ratio of 1:1.

- 4) Microsilica or High Reactivity Metakaolin. Microsilica solids or high reactivity metakaolin shall be added to the mixture at a minimum 25 lb/cu yd (15 kg/cu m) or 27 lb/cu yd (16 kg/cu m) respectively.
- c) Mixture Option 3. The cement used shall have a maximum total equivalent alkali content ( $\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$ ) of 0.60 percent. When aggregate in Group II is involved, any finely divided mineral may be used with a portland cement.
- d) Mixture Option 4. The cement used shall have a maximum total equivalent alkali content ( $\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$ ) of 0.45 percent. When aggregate in Group II or III is involved, any finely divided mineral may be used with a portland cement.
- e) Mixture Option 5. The proposed cement or finely divided mineral may be used if the ASTM C 1567 expansion value is  $\leq 0.16$  percent when performed on the aggregate in the concrete mixture with the highest ASTM C 1260 test result. The ASTM C 1567 test will be valid for two years, unless the Engineer determines the materials have changed significantly. For latex concrete, the ASTM C 1567 test shall be performed without the latex. The 0.20 percent autoclave expansion limit in ASTM C 1567 shall not apply.

If during the two year time period the Contractor needs to replace the cement, and the replacement cement has an equal or lower total equivalent alkali content ( $\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$ ), a new ASTM C 1567 test will not be required.

Testing. If an individual aggregate has an ASTM C 1260 expansion value  $> 0.16$  percent, an ASTM C 1293 test may be performed by the Contractor to evaluate the Department's ASTM C 1260 test result. The ASTM C 1293 test shall be performed with Type I or II cement having a total equivalent alkali content ( $\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$ ) of 0.80 percent or greater. The interior vertical wall of the ASTM C 1293 recommended container (pail) shall be half covered with a wick of absorbent material consisting of blotting paper. If the testing laboratory desires to use an alternate container or wick of absorbent material, ASTM C 1293 test results with an alkali-reactive aggregate of known expansion characteristics shall be provided to the Engineer for review and approval. If the expansion is less than 0.040 percent after one year, the aggregate will be assigned an ASTM C 1260 expansion value of 0.08 percent that will be valid for two years, unless the Engineer determines the aggregate has changed significantly.

The Engineer reserves the right to verify a Contractor's ASTM C 1293 or 1567 test result. The Engineer will not accept the result if the precision and bias for the test methods are not met.

The laboratory performing the ASTM C 1567 test shall be inspected for Hydraulic Cement - Physical Tests by the Cement and Concrete Reference Laboratory (CCRL) and shall be approved by the Department. The laboratory performing the ASTM C 1293 test shall be inspected for Portland Cement Concrete by CCRL and shall be approved by the Department.

**cement (BDE)**

Effective: January 1, 2007

Revise Section 1001 of the Standard Specifications to read:

**“SECTION 1001. CEMENT**

**1001.01 Cement Types.** Cement shall be according to the following.

- (a) Portland Cement. Acceptance of portland cement shall be according to the current Bureau of Materials and Physical Research’s Policy Memorandum, “Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants”.

Portland cement shall be according to ASTM C 150, and shall meet the standard physical and chemical requirements. Type I or Type II may be used for cast-in-place, precast, and precast prestressed concrete. Type III may be used according to Article 1020.04, or when approved by the Engineer. All other cements referenced in ASTM C 150 may be used when approved by the Engineer.

The total of all organic processing additions shall be a maximum of 1.0 percent by weight (mass) of the cement and the total of all inorganic processing additions shall be a maximum of 4.0 percent by weight (mass) of the cement. Organic processing additions shall be limited to grinding aids that improve the flowability of cement, reduce pack set, and improve grinding efficiency. Inorganic processing additions shall be limited to granulated blast-furnace slag according to the chemical requirements of AASHTO M 302 and Class C fly ash according to the chemical requirements of AASHTO M 295.

- (b) Portland-Pozzolan Cement. Acceptance of portland-pozzolan cement shall be according to the current Bureau of Materials and Physical Research’s Policy Memorandum, “Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants”.

Portland-pozzolan cement shall be according to ASTM C 595 and shall meet the standard physical and chemical requirements. Type IP or I(PM) may be used for cast-in-place, precast, and precast prestressed concrete, except when Class PP concrete is used. The pozzolan constituent for Type IP shall be a maximum of 21 percent of the weight (mass) of the portland-pozzolan cement. All other cements referenced in ASTM C 595 may be used when approved by the Engineer.

For cast-in-place construction, portland-pozzolan cements shall only be used from April 1 to October 15.

The total of all organic processing additions shall be a maximum of 1.0 percent by weight (mass) of the cement. Organic processing additions shall be limited to grinding aids as defined in (a) above. Inorganic processing additions shall not be used.

- (c) Portland Blast-Furnace Slag Cement. Acceptance of portland blast-furnace slag cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland blast-furnace slag cement shall be according to ASTM C 595 and shall meet the standard physical and chemical requirements. Type I(SM) slag-modified portland cement may be used for cast-in-place, precast, and precast prestressed concrete, except when Class PP concrete is used. All other cements referenced in ASTM C 595 may be used when approved by the Engineer.

For cast-in-place construction, portland blast-furnace slag cements shall only be used from April 1 to October 15.

The total of all organic processing additions shall be a maximum of 1.0 percent by weight (mass) of the cement. Organic processing additions shall be limited to grinding aids as defined in (a) above. Inorganic processing additions shall not be used.

- (d) Rapid Hardening Cement. Rapid hardening cement shall be used according to Article 1020.04 or when approved by the Engineer. The cement shall be on the Department's current "Approved List of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs", and shall be according to the following.

(1) The cement shall have a maximum final set of 25 minutes, according to Illinois Modified ASTM C 191.

(2) The cement shall have a minimum compressive strength of 2000 psi (13,800 kPa) at 3.0 hours, and 4000 psi (27,600 kPa) at 24.0 hours, according to Illinois Modified ASTM C 109.

(3) The cement shall have a maximum drying shrinkage of 0.050 percent at seven days, according to Illinois Modified ASTM C 596.

(4) The cement shall have a maximum expansion of 0.020 percent at 14 days, according to Illinois Modified ASTM C 1038.

(5) The cement shall have a minimum 80 percent relative dynamic modulus of elasticity; and shall not have a weight (mass) gain in excess of 0.15 percent or a weight (mass) loss in excess of 1.0 percent, after 100 cycles, according to Illinois Modified AASHTO T 161, Procedure B. At 100 cycles, the specimens are measured and weighed at 73 °F (23 °C).

- (e) Calcium Aluminate Cement. Calcium aluminate cement shall be used when specified by the Engineer. The cement shall meet the standard physical requirements for Type I cement according to ASTM C 150, except the time of setting shall not apply. The chemical requirements shall be determined according to ASTM C 114 and shall be as follows: minimum 38 percent aluminum oxide ( $Al_2O_3$ ), maximum 42 percent calcium

oxide (CaO), maximum 1 percent magnesium oxide (MgO), maximum 0.4 percent sulfur trioxide (SO<sub>3</sub>), maximum 1 percent loss on ignition, and maximum 3.5 percent insoluble residue.

**1001.02 Uniformity of Color.** Cement contained in single loads or in shipments of several loads to the same project shall not have visible differences in color.

**1001.03 Mixing Brands and Types.** Different brands or different types of cement from the same manufacturing plant, or the same brand or type from different plants shall not be mixed or used alternately in the same item of construction unless approved by the Engineer.

**1001.04 Storage.** Cement shall be stored and protected against damage, such as dampness which may cause partial set or hardened lumps. Different brands or different types of cement from the same manufacturing plant, or the same brand or type from different plants shall be kept separate.”

#### **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (DBE)**

Effective: September 1, 2000

Revised: January 1, 2007

**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 DBE Directory or most recent addendum.

**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.

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 firms 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. This 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 20.0% 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 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 forth in this Special Provision:

- (a) The bidder documents that firmly committed 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 may consult the DBE Directory as a reference source for DBE companies certified by the Department. 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 web site at [www.dot.il.gov](http://www.dot.il.gov).

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

- (a) In order to assure the timely award of the contract, the as-read low bidder shall submit a Disadvantaged Business Utilization Plan on Department form SBE 2026 within seven working days after the date of letting. To meet the seven day requirement, the bidder may send the Plan by certified mail or delivery service within the seven working day period. If a question arises concerning the mailing date of a Plan, the mailing date will be established by the U.S. Postal Service postmark on the original certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service. It is the

responsibility of the bidder to ensure that the postmark or receipt date is affixed within the seven working days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Plan is to be submitted 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). It is the responsibility of the bidder to obtain confirmation of telefax delivery. The Department will not accept a Utilization Plan if it does not meet the seven 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 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 or to extend the time for award.

- (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 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. The signatures on these forms must be original signatures. All elements of information indicated on the said form shall be provided, including but not limited to the following:
  - (1) The name and address of each DBE to be used;
  - (2) A description, including pay item numbers, of the commercially useful work to be done by each DBE;
  - (3) The price to be paid to each DBE for the identified work specifically stating 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) A commitment statement signed by the bidder and each DBE evidencing availability and intent to perform commercially useful work on the project; and
  - (5) If the bidder is a joint venture comprised of DBE firms and non-DBE firms, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s).
- (d) The contract will not be awarded until the Utilization Plan submitted by the bidder is approved. The Utilization Plan will be approved by the Department if the Plan commits sufficient commercially useful DBE work performance to meet the contract goal. The

Utilization Plan will not be approved by the Department if the Plan does not commit sufficient DBE performance to meet the contract goal unless the bidder documents that it made a good faith effort to meet the goal. The good faith procedures of Section VIII of this special provision apply. If the Utilization Plan is not approved because it is deficient in a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no less than a five working day period in order to cure the deficiency.

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 firm 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 firm 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 full value of all such DBE trucks operated using DBE employed drivers. Goal credit will be limited to the value of the reasonable fee or commission received by the DBE if trucks are leased from a non-DBE company.
- (e) DBE as a material supplier:
  - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
  - (2) 100 percent goal credit for the cost of materials or supplies obtained from a DBE manufacturer.

- (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

GOOD FAITH EFFORT PROCEDURES. If the bidder cannot obtain sufficient DBE commitments to meet the contract goal, the bidder must document in the Utilization Plan the good faith efforts made in the attempt 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 could reasonably be expected to obtain sufficient DBE participation. The Department will consider the quality, quantity, and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts are not good faith efforts; rather, the bidder is expected to have taken those 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.

- (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 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 a good faith effort has not been made, the Department will notify the bidder of that preliminary determination by contacting the responsible company official designated in the Utilization Plan. The preliminary determination shall include a statement of reasons why good faith efforts have not been found, and may include additional good faith efforts that the bidder could take. The notification will designate a five working day period during which the bidder shall take additional efforts. The bidder is not limited by a statement of additional efforts, but may take other action beyond any stated additional efforts in order to obtain additional DBE commitments. The bidder shall submit an amended Utilization Plan if additional DBE commitments to meet the contract goal are secured. If additional DBE commitments sufficient to meet the contract goal are not secured, the bidder shall report the final good faith efforts made in the time allotted. All additional efforts taken by the bidder will be considered as part of the bidder's good faith efforts. If the bidder is not able to meet the goal after taking additional efforts, the Department will make a pre-final determination of the good faith efforts of the bidder and will notify the designated responsible company official of the reasons for an adverse determination.
- (c) The bidder may request administrative reconsideration of a pre-final determination adverse to the bidder within the five working days after 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 pre-final determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issue of whether an adequate good faith effort was made to meet the contract goal. In addition, the request shall be considered a consent by the bidder to extend the time for award. 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 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.

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 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.

- (a) 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) All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the Participation Statement. The Contractor shall not terminate for convenience a DBE listed in the Utilization Plan and then perform the work of the terminated DBE with its own forces, those of an affiliate or those of another subcontractor, whether DBE or not, without first obtaining the written consent of the Bureau of Small Business Enterprises to amend the Utilization Plan. If a DBE listed in the Utilization Plan is terminated for reasons other than convenience, or fails to complete its work on the contract for any reason, the Contractor shall make good faith efforts to find another DBE to substitute for the terminated DBE. The good faith efforts

shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, but only to the extent needed to meet the contract goal or the amended contract goal. The Contractor shall notify the Bureau of Small Business Enterprises of any termination for reasons other than convenience, and shall obtain approval for inclusion of the substitute DBE in the Utilization Plan. If good faith efforts following a termination of a DBE for cause are not successful, the Contractor shall contact the Bureau and provide a full accounting of the efforts undertaken to obtain substitute DBE participation. The Bureau will evaluate the good faith efforts in light of all circumstances surrounding the performance status of the contract, and determine whether the contract goal should be amended.

- (c) The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefor 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 Report on Department form SBE 2115 to the Regional Engineer. If full and final payment has not been made to the DBE, the Report 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 Plan, the Department will deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages.
- (d) 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.
- (e) 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.

**DOWEL BARS (BDE)**

Effective: April 1, 2007

Revise the fifth sentence of Article 1006.11(b) of the Standard Specifications to read:

“The bars shall be epoxy coated according to AASHTO M 284, except the thickness of the epoxy shall be 7 to 12 mils (0.18 to 0.30 mm).”

**ENGINEER’S FIELD OFFICE TYPE A (BDE)**

Effective: April 1, 2007

Add the following to Article 670.02 of the Standard Specifications:

“(n) One wireless data router with wireless network connection to access the Department’s network for the exclusive use of the Engineer. The wireless data router shall operate within a temperature range of 32 to 131°F (0 to 55°C) and have the following capabilities.

(1) Connection.

- a. CDMA wireless technology with authentication and identification system for security.
- b. CDMA based EV-DO(rev.A) transmission capabilities.
- c. EVDO(rev.A) shall be backward compatible through both EVDO(rev0) and 1XRTT.
- d. Connection shall be capable of compression in order to optimize the connection speed.

(2) Router.

- a. A minimum of four ethernet ports for wired connection.
- b. Capable of 802.11b & g for wireless LAN interface.
- c. Configurable ability to port data to fax capabilities through the router using efax or IP fax devices.
- d. Automatic receipt of IP addresses with DHCP server.
- e. Configurable OFDM (Orthogonal Frequency Division Multiplexing) technology.

(3) Security.

- a. Configurable capable of 64-bit or 128-bit WEP encryption, and WPA-PSK authentication wireless security (WiFi Protected Access - Pre-shared Key Mode).
- b. Configurable LAN security: NAT with DHCP, PPTP VPN pass-through, MAC filtering, IP filtering, and filter scheduling.
- c. Configurable firewall security at the router.”

**erosion and sediment control deficiency deduction (BDE)**

Effective: April 1, 2007

Revise Article 105.03(a) of the Standard Specifications to read:

“(a) Erosion and Sediment Control Deficiency Deduction. When the Engineer is notified or determines an erosion and/or sediment control deficiency(s) exists, he/she will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 1 week based on the urgency of the situation and the nature of the deficiency. The Engineer will be the sole judge.

A deficiency may be any lack of repair, maintenance, or implementation of erosion and/or sediment control devices included in the contract, or any failure to comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Site Activities. A deficiency may also be applied to situations where corrective action is not an option such as the failure to participate in a jobsite inspection of the project, failure to install required measures prior to initiating earth moving operations, disregard of concrete washout requirements, or other disregard of the NPDES permit.

If the Contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the Contractor and end with the Engineer’s acceptance of the correction. The daily monetary deduction will be either \$1000.00 or 0.05 percent of the awarded contract value, whichever is greater. For those deficiencies where corrective action was not an option, the monetary deduction will be immediate and will be valued at one calendar day.”

**errata for the 2007 standard specifications (BDE)**

Effective: January 1, 2007

Revised: August 1, 2007

Page 60 Article 109.07(a). In the second line of the first paragraph change “amount” to “quantity”.

Page 154 Article 312.05. In the second line of the fifth paragraph change “180 °C” to “175 °C”.

Page 207 Article 406.14. In the second line of the second paragraph change “MIXTURE FOR CRACKS, JOINTS, AND FLANGWAYS, of the mixture composition specified;” to “MIXTURE FOR CRACKS, JOINTS, AND FLANGWAYS;”.

Page 237 Article 420.18. In the second line of the first paragraph change “October 15” to “November 1”.

Page 345 Article 505.08(l). In the third line of the first paragraph change “1/8 mm” to “1/8 in.”.

- Page 345 Article 505.08(l). In the nineteenth line of the first paragraph change “is” to “in”.
- Page 379 Article 512.15. In the first and sixth lines of the third paragraph change “50 percent” to “ten percent”.
- Page 383 Article 516.04(b)(1). In the fifth line of the first paragraph change “drillingpouring” to “pouring”.
- Page 390 Article 520.02(h). Change “1027.021” to “1027.01”.
- Page 398 Article 540.07(b). Add the following two paragraphs after the third paragraph:  
“Excavation in rock will be measured for payment according to Article 502.12.  
Removal and disposal of unstable and/or unsuitable material below plan bedding grade will be measured for payment according to Article 202.07.”
- Page 398 Article 540.08. Add the following two paragraphs after the fifth paragraph:  
“Excavation in rock will be paid for according to Article 502.13.  
Removal and disposal of unstable and/or unsuitable material below plan bedding grade will be paid for according to Article 202.08.”
- Page 435 Article 542.04(b). Delete the last sentence of the last paragraph.
- Page 465 Article 551.06. In the second line of the first paragraph change “or” to “and/or”.
- Page 585 Article 701.19(a). Add “701400” to the second line of the first paragraph.
- Page 586 Article 701.19(c). Delete “701400” from the second line of the first paragraph.
- Page 586 Article 701.19. Add the following subparagraph to this Article:  
“(f) Removal of existing pavement markings and raised reflective pavement markers will be measured for payment according to Article 783.05.”
- Page 587 Article 701.20(b). Delete “TRAFFIC CONTROL AND PROTECTION STANDARD 701400;” from the first paragraph.
- Page 588 Article 701.20. Add the following subparagraph to this Article.  
“(j) Removal of existing pavement markings and raised reflective pavement markers will be paid for according to Article 783.06.”
- Page 639 Article 805.04. In the first line of the second paragraph change “changes” to “charges”.

- Page 762 Article 1020.04. In Table 1 Classes of Portland Cement Concrete and Mix Design Criteria, add to the minimum cement factor for Class PC Concrete “5.65 (TY III)”, and add to the maximum cement factor for Class PC Concrete “7.05 (TY III)”.
- Page 765 Article 1020.04. In Table 1 Classes of Portland Cement Concrete and Mix Design Criteria (metric), add to the minimum cement factor for Class PC Concrete “335 (TY III)”, and add to the maximum cement factor for Class PC Concrete “418 (TY III)”.
- Page 800 Article 1030.05(a)(12). Revise “Dust Collection Factor” to “Dust Correction Factor”.
- Page 800 Article 1030.05(a)(14). Revise the first occurrence of Article 1030.05(a)(14) to Article 1030.05(a)(13).
- Page 800 Article 1030.05(a). Add to the list of QC/QA documents “(16) Calibration of Equipment for Asphalt Content Determination”.
- Page 809 Article 1030.05. Revise the subparagraph “(a) Quality Assurance by the Engineer.” to read “(e) Quality Assurance by the Engineer.”.
- Page 889 Article 1069.02(a)(2). In the third line of the first paragraph add “stainless steel” in front of “screws”.
- Page 889 Article 1069.02(b). Delete the third paragraph.
- Page 890 Article 1069.02(c). Delete subparagraph (c).
- Page 946 Article 1080.03(a)(1). In the third line of the first paragraph revise “(300 µm)” to “(600 µm)”.
- Page 963 Article 1083.02(b). In the second line of the first paragraph revise “ASTM D 4894” to “ASTM D 4895”.
- Page 1076 In the Index of Pay Items delete the pay item “BITUMINOUS SURFACE REMOVAL – BUTT JOINT”.

**hot-mix asphalt EQUIPMENT, SPREADING AND FINISHING MACHINE (BDE)**

Effective: January 1, 2005

Revised: January 1, 2007

Revise the fourth paragraph of Article 1102.03 of the Standard Specifications to read:

“The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to uniformly place a non-segregated mixture in front of the screed. The distribution system shall have chain curtains, deflector plates, and /or other devices designed and built by the paver manufacturer to prevent segregation during distribution of the mixture from the hopper to the paver screed. The

Contractor shall submit a written certification that the devices recommended by the paver manufacturer to prevent segregation have been installed and are operational. Prior to paving, the Contractor, in the presence of the Engineer, shall visually inspect paver parts specifically identified by the manufacturer for excessive wear and the need for replacement. The Contractor shall supply a completed check list to the Engineer noting the condition of the parts. Worn parts shall be replaced. The Engineer may require an additional inspection prior to placement of the surface course or at other times throughout the work.”

**hot-mix asphalt - field voids in the mineral aggregate (BDE)**

Effective: April 1, 2007

Add the following to the table in Article 1030.05(d)(2)a. of the Standard Specifications:

"Parameter	Frequency of Tests	Frequency of Tests	Test Method See Manual of Test Procedures for Materials
	High ESAL Mixture Low ESAL Mixture	All Other Mixtures	
VMA  Note 5.	1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)	1 per day	Illinois-Modified AASHTO R 35

Note 5. The  $G_{sb}$  used in the voids in the mineral aggregate (VMA) calculation shall be the same average  $G_{sb}$  value listed in the mix design.”

Add the following to the Control Limits table in Article 1030.05(d)(4) of the Standard Specifications:

"CONTROL LIMITS			
Parameter	High ESAL Low ESAL	High ESAL Low ESAL	All Other
	Individual Test	Moving Avg. of 4	Individual Test
VMA	-0.7 % <sup>2/</sup>	-0.5 % <sup>2/</sup>	N/A

2/ Allowable limit below minimum design VMA requirement”

Add the following to the table in Article 1030.05(d)(5) of the Standard Specifications:

"CONTROL CHART REQUIREMENTS	High ESAL Low ESAL	All Other
	VMA”	

Revise the heading of Article 1030.05(d)(6)a.1. of the Standard Specifications to read:

“1. Voids, VMA, and Asphalt Binder Content.”

Revise the first sentence of the first paragraph of Article 1030.05(d)(6)a.1.(a.) of the Standard Specifications to read:

“If the retest for voids, VMA, or asphalt binder content exceeds control limits, HMA production shall cease and immediate corrective action shall be instituted by the Contractor.”

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

“Test Parameter	Acceptable Limits of Precision
% Passing: <sup>1/</sup>	
1/2 in. (12.5 mm)	5.0 %
No. 4 (4.75 mm)	5.0 %
No. 8 (2.36 mm)	3.0 %
No. 30 (600 μm)	2.0 %
Total Dust Content No. 200 (75 μm) <sup>1/</sup>	2.2 %
Asphalt Binder Content	0.3 %
Maximum Specific Gravity of Mixture	0.026
Bulk Specific Gravity	0.030
VMA	1.4 %
Density (% Compaction)	1.0 % (Correlated)

1/ Based on washed ignition.”

**impact attenuatorS, temporary (BDE)**

Effective: November 1, 2003

Revised: January 1, 2007

Description. This work shall consist of furnishing, installing, maintaining, and removing temporary impact attenuators of the category and test level specified.

Materials. Materials shall meet the requirements of the impact attenuator manufacturer and the following:

Item	Article/Section
(a) Fine Aggregate (Note 1).....	1003.01
(b) Steel Posts, Structural Shapes, and Plates .....	1006.04
(c) Rail Elements, End Section Plates, and Splice Plates.....	1006.25
(d) Bolts, Nuts, Washers and Hardware .....	1006.25
(e) Hollow Structural Tubing .....	1006.27(b)
(f) Wood Posts and Wood Blockouts.....	1007.01, 1007.02, 1007.06
(g) Preservative Treatment.....	1007.12
(h) Packaged Rapid Hardening Mortar .....	1018.01

Note 1. Fine aggregate shall be FA 1 or FA 2, Class A quality. The sand shall be unbagged and shall have a maximum moisture content of five percent.

### CONSTRUCTION REQUIREMENTS

General. Impact Attenuators shall meet the testing criteria contained in National Cooperative Highway Research Program (NCHRP) Report 350 for the test level specified and shall be on the Department's approved list.

Installation. Regrading of slopes or approaches for the installation shall be as shown on the plans.

Attenuator bases, when required by the manufacturer, shall be constructed on a prepared subgrade according to the manufacturer's specifications. The surface of the base shall be slightly sloped or crowned to facilitate drainage.

Impact attenuators shall be installed according to the manufacturer's specifications and include all necessary transitions between the impact attenuator and the item to which it is attached.

When water filled attenuators are used between November 1 and April 15, they shall contain anti-freeze according to the manufacturer's recommendations.

Markings. Sand module impact attenuators shall be striped with alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes. There shall be at least two of each stripe on each module.

Other types of impact attenuators shall have a terminal marker applied to their nose and reflectors along their sides.

Maintenance. All maintenance of the impact attenuators shall be the responsibility of the Contractor until removal is directed by the Engineer.

Relocate. When relocation of temporary impact attenuators is specified, they shall be removed, relocated and reinstalled at the new location. The reinstallation requirements shall be the same as those for a new installation.

Removal. When the Engineer determines the temporary impact attenuators are no longer required, the installation shall be dismantled with all hardware becoming the property of the Contractor.

Surplus material shall be disposed of according to Article 202.03. Anti-freeze, when present, shall be disposed of/recycled according to local ordinances.

When impact attenuators have been anchored to the pavement, the anchor holes shall be repaired with rapid set mortar. Only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.

Method of Measurement. This work will be measured for payment as each, where each is defined as one complete installation.

Basis of Payment. This work will be paid for at the contract unit price per each for IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW); IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, WIDE); IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, RESETTABLE); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, NARROW); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, WIDE); or IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) of the test level specified.

Relocation of the devices will be paid for at the contract unit price per each for IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE); IMPACT ATTENUATORS, RELOCATE (SEVERE USE); or IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE); of the test level specified.

Regrading of slopes or approaches will be paid for according to Section 202 and/or Section 204 of the Standard Specifications.

### **LEGAL REQUIREMENTS TO BE OBSERVED (BDE)**

Effective: August 1, 2007

Revise Article 107.01 of the Standard Specifications to read:

**“107.01 Legal Requirements to be Observed.** The Contractor warrants that it is, and that it shall keep fully informed of all legal requirements found in Federal, State, and local laws, ordinances, rules and regulations, and all orders, decrees, notices of violation or enforcement actions issued by any judicial or administrative body, board, agency, or tribunal having any jurisdiction or authority, that in any manner affect those engaged or employed to perform the work of the contract, or that affect the performance and conduct of the work of the contract. Unless otherwise provided in the contract, the Contractor shall obtain and keep current all permits and licenses, and give all notices required for the performance of the work of the contract that may be required by all such laws, ordinances, rules, regulations, orders, decrees, notices, and actions. The Contractor shall observe and obey all such laws, ordinances, rules, regulations, orders, decrees, notices, and actions; and shall indemnify and save harmless the State, the Department and all of its officers, agents, employees, and servants against any claim, liability, fine, or monetary assessment arising from the breach of this article or the violation of any such law, ordinance, rule, regulation, order, decree, notice or action, whether by the Contractor, a subcontractor, a supplier of material or service, others engaged by the Contractor, or the employees of any of them. Except as expressly mandated by law or regulation, or otherwise provided in the contract, the Department shall not be responsible for monitoring the Contractor’s compliance with any law, ordinance, rule, regulation, order, decree, notice, or action. However, on noticing any violation of a legal requirement, the Department will notify the Contractor and the agency responsible for enforcement. The Department will cooperate with other agencies in their efforts to enforce legal requirements and may assist any such agency’s effort to obtain Contractor compliance. The Contractor shall comply fully with any and all requests made by the Department within the time specified. The obligations of the Contractor under this article shall not be released or diminished by the issuance of any notice of violation or enforcement action to or in the name of the Department.”

**Notification of REDUCED WIDTH (BDE)**

Effective: April 1, 2007

Add the following after the first paragraph of Article 701.06 of the Standard Specifications:

“Where the clear width through a work zone with temporary concrete barrier will be 16.0 ft (4.88 m) or less, the Contractor shall notify the Engineer at least 21 days in advance of implementing the traffic control for that restriction.”

**ORGANIC ZINC-RICH PAINT SYSTEM (BDE)**

Effective: November 1, 2001

Revised: January 1, 2007

Add the following to Section 1008 of the Standard Specifications:

**“1008.05 Organic Zinc-Rich Paint System.** The organic zinc-rich paint system shall consist of an organic zinc-rich primer, an epoxy or urethane intermediate coat, and aliphatic urethane finish coats. It is intended for use over blast-cleaned steel when three-coat shop applications are specified. The system is also suitable for field painting blast-cleaned existing structures.

(a) General Requirements.

- (1) Compatibility. Each coating in the system shall be supplied by the same paint manufacturer.
- (2) Toxicity. Each coating shall contain less than 0.01 percent lead in the dry film and no more than trace amounts of hexavalent chromium, cadmium, mercury or other toxic heavy metals.
- (3) Volatile Organics. The volatile organic compounds of each coating shall not exceed 3.5 lb/gal (420 g/L) as applied.

(b) Test Panel Preparation.

- (1) Substrate and Surface Preparation. Test panels shall be AASHTO M 270, Grade 36 (M 270M Grade 250), hot-rolled steel measuring 4 x 6 in. (100 x 150 mm). Panels shall be blast-cleaned per SSPC-SP5 white metal condition using metallic abrasive. The abrasive shall be a 60/40 mix of shot and grit. The shot shall be an SAE shot number S230 and the grit an SAE number G40. Hardness of the shot and grit shall be Rockwell C45. The anchor profile shall be 1.5-2.5 mils (40-65 microns) measured according to ASTM D 4417, Method C.
- (2) Application and Curing. All coatings shall be spray applied at the manufacturer's recommended film thickness. The coated panels shall be cured at least 14 days at 75 °F ± 2 °F (24 °C ± 1 °C) and 50 ± 5 percent relative humidity.

(3) Scribing. The test panels shall be scribed according to ASTM D 1654 with a single "X" mark centered on the panel. The rectangular dimensions of the scribe shall have a top width of 2 in. (50 mm) and a height of 4 in. (100 mm). The scribe cut shall expose the steel substrate as verified with a microscope.

(4) Number of Panels. All testing shall be performed on triplicate panels.

(c) Zinc-Rich Primer Requirements.

(1) Generic Type. This material shall be an organic zinc-rich epoxy or urethane primer. It shall be suitable for topcoating with epoxies, urethanes, and acrylics.

(2) Zinc Dust. The zinc dust pigment shall comply with ASTM D 520, Type II.

(3) Slip Coefficient. The organic zinc coating shall meet a Class B AASHTO slip coefficient (0.50 or greater) for structural steel joints using ASTM A 325 (A 325M) or A 490 (A 490M) bolts.

(4) Salt Fog. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 5,000 hours of salt fog exposure when tested according to ASTM B 117 and evaluated according to AASHTO R 31.

(5) Cyclic Exposure. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 5,000 hours of cyclic exposure when tested according to ASTM D 5894 and evaluated according to AASHTO R 31.

(6) Humidity Exposure. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 4,000 hours of humidity exposure when tested according to ASTM D 2247 and evaluated according to AASHTO R 31.

(7) Adhesion. The adhesion to an abrasively blasted steel substrate shall not be less than 900 psi (6200 kPa) when tested according to ASTM D 4541 Annex A4.

(8) Freeze Thaw Stability. There shall be no reduction of adhesion, which exceeds the test precision, after 30 days of freeze/thaw/immersion testing. One 24-hour cycle shall consist of 16 hours of approximately -22 °F (-30 °C) followed by four hours of thawing at 122 °F (50 °C) and four hours tap water immersion at 77 °F (25 °C). The test panels shall remain in the freezer on weekends and holidays.

(d) Intermediate Coat Requirements.

(1) Generic Type. This material shall be an epoxy or urethane. It shall be suitable as an intermediate coat over inorganic and organic zinc primers and compatible with acrylic, epoxy, and polyurethane topcoats.

(2) Color. The color of the intermediate coat shall be white or off-white.

(e) Urethane Finish Coat Requirements.

- (1) Generic Type. This material shall be an aliphatic urethane. It shall be suitable as a topcoat over epoxies and urethanes.
- (2) Color and Hiding Power. The finish coat shall match Munsell Glossy Color 7.5G 4/8 Interstate Green, 2.5YR 3/4 Reddish Brown, 10B 3/6 Blue, or 5B 7/1 Gray. The color difference shall not exceed 3.0 Hunter Delta E Units. Color difference shall be measured by instrumental comparison of the designated Munsell standard to a minimum dry film thickness of 3 mils (75 microns) of sample coating produced on a test panel according to ASTM D 823, Practice E, Hand-Held, Blade Film Application. Color measurements shall be determined on a spectrophotometer with 45 degrees circumferential/zero degrees geometry, illuminant C, and two degrees observer angle. The spectrophotometer shall measure the visible spectrum from 380-720 nanometers with a wavelength interval and spectral bandpass of 10 nanometers.

The contrast ratio of the finish coat at 3 mils (75 microns) dry film thickness shall not be less than 0.99 when tested according to ASTM D 2805.

- (3) Weathering Resistance. Test panels shall be aluminum alloy measuring 12 x 4 in. (300 x 100 mm) prepared according to ASTM D 1730 Type A, Method 1 Solvent Cleaning. A minimum dry film thickness of 3 mils (75 microns) of finish coat shall be applied to three test panels according to ASTM D 823, Practice E, Hand Held Blade Film Application. The coated panels shall be cured at least 14 days at 75 °F ± 2 °F (24 °C ± 1 °C) and 50 ± 5 percent relative humidity. The panels shall be subjected to 300 hours of accelerated weathering using the light and water exposure apparatus (fluorescent UV - condensation type) as specified in ASTM G 53-96 and ASTM G 154 (equipped with UVB-313 lamps). The cycle shall consist of eight hours UV exposure at 140 °F (60 °C) followed by four hours of condensation at 104 °F (40 °C). After exposure, rinse the panel with clean water; allow to dry at room temperature for one hour. The exposed panels shall not show a color change of more than 3 Hunter Delta E Units.

(f) Three Coat System Requirements.

- (1) Finish Coat Color. For testing purposes, the color of the finish coat shall match Federal Standard No 595, color chip 14062 (green).
- (2) Salt Fog. When tested according to ASTM B 117 and evaluated according to AASHTO R 31, the paint system shall exhibit no spontaneous delamination and not exceed the following acceptance levels after 5,000 hours of salt fog exposure:

Salt Fog Acceptance Criteria (max)			
Blister Criteria	Rust Criteria		
Size/Frequency	Maximum Creep	Average Creep	% Rusting at Scribed Edges
#8 Few	4mm	1mm	1

- (3) Cyclic Exposure. When tested according to ASTM D 5894 and evaluated according to AASHTO R 31, the paint system shall exhibit no spontaneous delamination and not exceed the following acceptance levels after 5,000 hours of cyclic exposure:

Cyclic Exposure Acceptance Criteria (max)			
Blister Criteria	Rust Criteria		
Size/Frequency	Maximum Creep	Average Creep	% Rusting at Scribed Edges
#8 Few	2mm	1mm	1

- (4) Humidity Exposure. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 4,000 hours of humidity exposure when tested according to ASTM D 2247 and evaluated according to AASHTO R 31.
- (5) Adhesion. The adhesion to an abrasively blasted steel substrate shall not be less than 900 psi (6200 kPa) when tested according to ASTM D 4541 Annex A4.
- (6) Freeze Thaw Stability. There shall be no reduction of adhesion, which exceeds the test precision, after 30 days of freeze/thaw/immersion testing. One 24 hour cycle shall consist of 16 hours of approximately -22 °F (-30 °C) followed by four hours of thawing at 122 °F (50 °C) and four hours tap water immersion at 77 °F (25 °C). The test panels shall remain in the freezer mode on weekends and holidays.
- (g) Qualification Samples and Tests. The manufacturer shall supply, to an independent test laboratory and to the Department, samples of the organic zinc-rich primer, epoxy or urethane intermediate coat, and aliphatic urethane finish coats for evaluation. Prior to approval and use, the manufacturer shall submit a notarized certification of the independent laboratory, together with results of all tests, stating that these materials meet the requirements as set forth herein. The certified test report shall state lots tested, manufacturer's name, product names, and dates of manufacture. New certified test results and samples for testing by the Department shall be submitted any time the manufacturing process or paint formulation is changed. All costs of testing, other than tests conducted by the Department, shall be borne by the manufacturer.
- (h) Acceptance Samples and Certification. A 1 qt (1 L) sample of each lot of paint produced for use on state or local agency projects shall be submitted to the Department for testing, together with a manufacturer's certification. The certification shall state that the formulation for the lot represented is essentially identical to that used for qualification testing. All acceptance samples shall be witnessed by a representative of the Illinois Department of Transportation. The organic zinc-rich primer, epoxy or urethane intermediate coat, and aliphatic urethane finish coats shall not be used until tests are completed and they have met the requirements as set forth herein."

**Payments to Subcontractors (BDE)**

Effective: June 1, 2000

Revised: January 1, 2006

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts and to set the time for such payments.

State law also addresses the timing of payments to be made to subcontractors and material suppliers. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, requires that when a Contractor receives any payment from the Department, the Contractor shall make corresponding, proportional payments to each subcontractor and material supplier performing work or supplying material within 15 calendar days after receipt of the Department payment. Section 7 of the Act further provides that interest in the amount of two percent per month, in addition to the payment due, shall be paid to any subcontractor or material supplier by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors and material suppliers throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the State Prompt Payment Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

When progress payments are made to the Contractor according to Article 109.07 of the Standard Specifications, the Contractor shall make a corresponding payment to each subcontractor and material supplier in proportion to the work satisfactorily completed by each subcontractor and for the material supplied to perform any work of the contract. The proportionate amount of partial payment due to each subcontractor and material supplier throughout the contracting chain shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors and material suppliers shall be paid by the Contractor within 15 calendar days after the receipt of payment from the Department. The Contractor shall not hold retainage from the subcontractors. These obligations shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers; and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain. Any payment or portion of a payment subject to this provision may only be withheld from the subcontractor or material supplier to whom it is due for reasonable cause.

This Special Provision does not create any rights in favor of any subcontractor or material supplier against the State or authorize any cause of action against the State on account of any payment, nonpayment, delayed payment, or interest claimed by application of the State Prompt Payment Act. The Department will not approve any delay or postponement of the 15 day requirement except for reasonable cause shown after notice and hearing pursuant to Section 7(b) of the State Prompt Payment Act. State law creates other and additional remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond according to the Public Construction Bond Act, 30 ILCS 550.

**PLANTING WOODY PLANTS (BDE)**

Effective: January 1, 2006

Revise the first and second paragraphs of Article 253.14 of the Standard Specifications to read:

**“253.14 Period of Establishment.** Prior to being accepted, the plants shall endure a period of establishment. This period shall begin in June and end in September of the same year. To qualify for inspection, plants shall have been in place, in a live healthy condition, on or before June 1 of the year of inspection. To be acceptable, plants shall be in a live healthy condition, representative of their species, at the time of inspection in the month of September.

When the planting work is performed by a subcontractor, this delay in inspection and acceptance of plants shall not delay acceptance of the entire project and final payment due if the Contractor requires and receives from the subcontractor a third party performance bond naming the Department as obligee in the full amount of the planting quantities listed in the contract, multiplied by their contract unit prices. The bond shall be executed prior to acceptance and final payment of the non-planting items and shall be in full force and effect until final inspection and acceptance of all plants including replacements. Execution of the third party bond shall be the option of the prime Contractor.”

Revise Article 253.16 of the Standard Specifications to read:

**“253.16 Method of Measurement.** This work will be measured for final payment, in place, after the period of establishment. Trees, shrubs, and vines will be measured as each individual plant. Seedlings will be measured in units of 100 plants.”

Revise Article 253.17 of the Standard Specifications to read:

**“253.17 Basis of Payment.** This work will be paid for at the contract unit price per each for TREES, SHRUBS, and VINES, of the species, root type, and plant size specified; and per unit for SEEDLINGS. Payment will be made according to the following schedule.

- (a) Initial Payment. Upon planting, 75 percent of the pay item(s) will be paid.
- (b) Final Payment. Upon inspection and acceptance of the plant material, or upon execution of a third party bond, the remaining 25 percent of the pay item(s) will be paid.”

**plastic blockouts for guardrail (BDE)**

Effective: November 1, 2004

Revised: January 1, 2007

Add the following to Article 630.02 of the Standard Specifications:

“(g) Plastic Blockouts (Note 1.)

Note 1. Plastic blockouts may be used in lieu of wood blockouts for steel plate beam guardrail. The plastic blockouts shall be the minimum dimensions shown on the plans and shall be on the Department’s approved list.”

**polyurea pavement marking (BDE)**

Effective: April 1, 2004

Revised: January 1, 2007

Description. This work shall consist of furnishing and applying pavement marking lines.

The type of polyurea pavement marking applied will be determined by the type of reflective media used. Polyurea Pavement Marking Type I shall use glass beads as a reflective media. Polyurea Pavement Marking Type II shall use a combination of composite reflective elements and glass beads as a reflective media.

Polyurea-based liquid pavement markings shall only be applied by Contractors on the list of Approved Polyurea Contractors maintained by the Engineer of Operations and in effect on the date of advertisement for bids.

Materials. Materials shall meet the following requirements:

- (a) Polyurea Pavement Marking. The polyurea pavement marking material shall consist of 100 percent solid two part system formulated and designed to provide a simple volumetric mixing ratio of two components (must be two or three volumes of Part A to one volume of Part B). No volatile or polluting solvents or fillers will be allowed.
- (b) Pigmentation. The pigment content by weight (mass) of component A shall be determined by low temperature ashing according to ASTM D 3723. The pigment content shall not vary more than  $\pm$  two percent from the pigment content of the original qualified paint.

White Pigment shall be Titanium Dioxide meeting ASTM D 476 Type II, Rutile.

Yellow Pigment shall be an Organic Yellow and contain no heavy metals.

- (c) Environmental. Upon heating to application temperature, the material shall not exude fumes which are toxic or injurious to persons or property.
- (d) Daylight Reflectance. The daylight directional reflectance of the cured polyurea material (without reflective media) shall be a minimum of 80 percent (white) and 50 percent (yellow) relative to magnesium oxide when tested using a color spectrophotometer with a 45 degrees circumferential /zero degrees geometry, illuminant C, and two degrees observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm. In addition, the color of the yellow polyurea shall visually match Color Number 33538 of Federal Standard 595a with chromaticity limits as follows:

X	0.490	0.475	0.485	0.539
Y	0.470	0.438	0.425	0.456

- (e) Weathering Resistance. The polyurea marking material, when mixed in the proper ratio and applied at 14 to 16 mils (0.35 to 0.41 mm) wet film thickness to an aluminum alloy panel (Federal Test Std. No. 141, Method 2013) and allowed to cure for 72 hours at room temperature, shall be subjected to accelerated weathering for 75 hours. The accelerated weathering shall be completed by using the light and water exposure apparatus (fluorescent UV - condensation type) and tested according to ASTM G 53.

The cycle shall consist of four hours UV exposure at 122 °F (50 °C) and four hours of condensation at 104 °F (40 °C). UVB 313 bulbs shall be used. At the end of the exposure period, the material shall show no substantial change in color or gloss.

- (f) Dry Time. The polyurea pavement marking material, when mixed in the proper ratio and applied at 14 to 16 mils (0.35 to 0.41 mm) wet film thickness and with the proper saturation of reflective media, shall exhibit a no-tracking time of ten minutes or less when tested according to ASTM D 711.
- (g) Adhesion. The catalyzed polyurea pavement marking materials when applied to a 4 x 4 x 2 in. (100 x 100 x 50 mm) concrete block, shall have a degree of adhesion which results in a 100 percent concrete failure in the performance of this test.

The concrete block shall be brushed on one side and have a minimum strength of 3500 psi (24,100 kPa). A 2 in. (50 mm) square film of the mixed polyurea shall be applied to the brushed surface and allowed to cure for 72 hours at room temperature. A 2 in. (50 mm) square cube shall be affixed to the surface of the polyurea by means of an epoxy glue. After the glue has cured for 24 hours, the polyurea specimen shall be placed on a dynamic testing machine in such a fashion so that the specimen block is in a fixed position and the 2 in. (50 mm) cube (glued to the polyurea surface) is attached to the dynamometer head. Direct upward pressure shall be slowly applied until the polyurea system fails. The location of the break and the amount of concrete failure shall be recorded.

- (h) Hardness. The polyurea pavement marking materials when tested according to ASTM D 2240, shall have a shore D hardness of between 70 and 100. Films shall be cast on a rigid substrate at 14 to 16 mils (0.35 to 0.41 mm) in thickness and allowed to cure at room temperature for 72 hours before testing.
- (i) Abrasion. The abrasion resistance shall be evaluated according to ASTM D 4060 using a Taber Abrader with a 1,000 gram load and CS 17 wheels. The duration of the test shall be 1,000 cycles. The loss shall be calculated by difference and be less than 120 mgs. The tests shall be run on cured samples of polyurea material which have been applied at a film thickness of 14 to 16 mils (0.35 to 0.41 mm) to code S-16 stainless steel plates. The films shall be allowed to cure at room temperature for at least 72 hours and not more than 96 hours before testing.

- (j) Reflective Media. The reflective media shall meet the following requirements:

(1) Type I - The glass beads shall meet the requirements of Article 1095.07 of the Standard Specifications and the following requirements:

- a. First Drop Glass Beads. The first drop glass beads shall be tested by the standard visual method of large glass spheres adopted by the Department. The beads shall have a silane coating and meet the following sieve requirements:

U.S. Standard Sieve Number	Sieve Size	% Passing By Weight (mass)
12	1.70 mm	95-100
14	1.40 mm	75-95
16	1.18 mm	10-47
18	1.00 mm	0-7
20	850 µm	0-5

b. Second Drop Glass Beads. The second drop glass beads shall meet the requirements of Article 1095.07 of the Standard Specifications for Type B.

(2) Type II - The combination of microcrystalline ceramic elements and glass beads shall meet the following requirements:

a. First Drop Glass Beads. The first drop glass beads shall meet the following requirements:

1. Composition. The elements shall be composed of a titania opacified ceramic core having clear and or yellow tinted microcrystalline ceramic beads embedded to the outer surface.
2. Index of Refraction. All microcrystalline reflective elements embedded to the outer surface shall have an index of refraction of 1.8 when tested by the immersion method.
3. Acid Resistance. A sample of microcrystalline ceramic beads supplied by the manufacturer, shall show resistance to corrosion of their surface after exposure to a one percent solution (by weight (mass)) of sulfuric acid. Adding 0.2 oz (5.7 ml) of concentrated acid into the water shall make the one percent acid solution. This test shall be performed by taking a 1 x 2 in. (25 x 50 mm) sample and adhering it to the bottom of a glass tray and placing just enough acid solution to completely immerse the sample. The tray shall be covered with a piece of glass to prevent evaporation and allow the sample to be exposed for 24 hours under these conditions. The acid solution shall be decanted (do not rinse, touch, or otherwise disturb the bead surfaces) and the sample dried while adhered to the glass tray in a 150 °F (66 °C) oven for approximately 15 minutes. Microscope examination (20X) shall show no white (corroded) layer on the entire surface.

b. Second Drop Glass Beads. The second drop glass beads shall meet the requirements of Article 1095.07 of the Standard Specifications for Type B or the following manufacturer's specification:

1. Sieve Analysis. The glass beads shall meet the following sieve requirements:

U.S. Standard Sieve Number	Sieve Size	% Passing By Weight (mass)
20	850 μm	100
30	600 μm	75-95
50	300 μm	15-35
100	150 μm	0-5

The manufacturer of the glass beads shall certify that the treatment of the glass beads meets the requirements of the polyurea manufacturer.

2. Imperfections. The surface of the glass beads shall be free of pits and scratches. The glass beads shall be spherical in shape and shall contain a

maximum of 20 percent by weight (mass) of irregular shapes when tested by the standard method using a vibratile inclined glass plate as adopted by the Department.

3. Index of Refraction. The index of refraction of the glass beads shall be a minimum of 1.50 when tested by the immersion method at 77 °F (25 °C).
- (k) Packaging. Microcrystalline ceramic reflective elements and glass beads shall be delivered in approved moisture proof bags or weather resistant bulk boxes. Each carton shall be legibly marked with the manufacturer, specifications and type, lot number, and the month and year the microcrystalline ceramic reflective elements and/or glass beads were packaged. The letters and numbers used in the stencils shall be a minimum of 1/2 in. (12.7 mm) in height.
- (1) Moisture Proof Bags. Moisture proof bags shall consist of at least five ply paper construction unless otherwise specified. Each bag shall contain 50 lb (22.7 kg) net.
  - (2) Bulk Weather Resistance Boxes. Bulk weather resistance boxes shall conform to Federal Specification PPP-8-640D Class II or latest revision. Boxes are to be weather resistant, triple wall, fluted, corrugated-fiber board. Cartons shall be strapped with two metal straps. Straps shall surround the outside perimeter of the carton. The first strap shall be located approximately 2 in. (50 mm) from the bottom of the carton and the second strap shall be placed approximately in the middle of the carton. All cartons shall be shrink wrapped for protection from moisture. Cartons shall be lined with a minimum 4 mil polyester bag and meet Interstate Commerce Commission requirements. Cartons shall be approximately 38 x 38 in. (1 x 1 m), contain 2000 lb (910 kg) of microcrystalline ceramic reflective elements and/or glass beads and be supported on a wooden pallet with fiber straps.
- (l) Packaging. The material shall be shipped to the job site in substantial containers and shall be plainly marked with the manufacturer's name and address, the name and color of the material, date of manufacture, and batch number.
- (m) Verification. Prior to approval and use of the polyurea pavement marking materials, the manufacturer shall submit a notarized certification of an independent laboratory, together with the results of all tests, stating these materials meet the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, brand name of polyurea and date of manufacture. The certification shall be accompanied by one 1 pt (1/2 L) samples each of Part A and Part B. Samples shall be sent in the appropriate volumes for complete mixing of Part A and Part B.
- After approval by the Department, certification by the polyurea manufacturer shall be submitted for each batch used. New independent laboratory certified test results and samples for testing by the Department shall be submitted any time the manufacturing process or paint formulation is changed. All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer.
- (n) Acceptance samples. Acceptance samples shall consist of one 1 pt (1/2 L) samples of Part A and Part B, of each lot of paint. Samples shall be sent in the appropriate volumes for complete mixing of Part A and Part B. The samples shall be submitted to the

Department for testing, together with a manufacturer's certification. The certification shall state the formulation for the lot represented is essentially identical to that used for qualification testing. All, acceptance samples will be taken by a representative of the Department. The polyurea pavement marking materials shall not be used until tests are completed and they have met the requirements as set forth herein.

- (o) Material Retainage. The manufacturer shall retain the test sample for a minimum of 18 months.

Equipment. The polyurea pavement marking compounds shall be applied through equipment specifically designed to apply two component liquid materials, glass beads and/or reflective elements in a continuous and skip-line pattern. The two-component liquid materials shall be applied after being accurately metered and then mixed with a static mix tube or airless impingement mixing guns. The static mixing tube or impingement mixing guns shall accommodate plural component material systems that have a volumetric ratio of 2 to 1 or 3 to 1. This equipment shall produce the required amount of heat at the mixing head and gun tip and maintain those temperatures within the tolerances specified. The guns shall have the capacity to deliver materials from approximately 1.5 to 3 gal/min (5.7 to 11.4 L/min) to compensate for a typical range of application speeds of 6 to 8 mph (10 to 13 km/h). The accessories such as spray tip, mix chamber, and rod diameter shall be selected according to the manufacturer's specifications to achieve proper mixing and an acceptable spray pattern. The application equipment shall be maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. This equipment shall also have as an integral part of the gun carriage, a high pressure air spray capable of cleaning the pavement immediately prior to making application.

The equipment shall be capable of spraying both yellow and white polyurea, according to the manufacturer's recommended proportions and be mounted on a truck of sufficient size and stability with an adequate power source to produce lines of uniform dimensions and prevent application failure. The truck shall have at least two polyurea tanks each of 110 gal (415 L) minimum capacity and be equipped with hydraulic systems and agitators. It shall be capable of placing stripes on the left and right sides and placing two lines on a three-line system simultaneously with either line in a solid or intermittent pattern, in yellow or white, and applying the appropriate reflective media according to manufacturer's recommendations. All guns shall be in full view of operations at all times. The equipment shall have a metering device to register the accumulated installed quantities for each gun, each day. Each vehicle shall include at least one operator who shall be a technical expert in equipment operations and polyurea application techniques. Certification of equipment shall be provided at the pre-construction conference.

The mobile applicator shall include the following features:

- (a) Material Reservoirs. The applicator shall provide individual material reservoirs, or space for the storage of Part A and Part B of the resin composition.
- (b) Heating Equipment. The applicator shall be equipped with heating equipment of sufficient capacity to maintain the individual resin components at the manufacturer's recommended temperature of  $\pm 5$  °F ( $\pm 2.8$  °C) for spray application.

- (c) Dispensing Equipment. The applicator shall be equipped with glass bead and/or reflective element dispensing equipment. The applicator shall be capable of applying the glass beads and/or reflective elements at a rate and combination indicated by the manufacturer.
- (d) Volumetric Usage. The applicator shall be equipped with metering devices or pressure gauges on the proportioning pumps as well as stroke counters to monitor volumetric usage. Metering devices or pressure gauges and stroke counters shall be visible to the Engineer.
- (e) Pavement Marking Placement. The applicator shall be equipped with all the necessary spray equipment, mixers, compressors and other appurtenances to allow for the placement of reflectorized pavement markings in a simultaneous sequence of operations.

The Contractor shall provide an accurate temperature-measuring device(s) that shall be capable of measuring the pavement temperature prior to application of the material, the material temperature at the gun tip and the material temperature prior to mixing.

### CONSTRUCTION REQUIREMENTS

General. The pavement shall be cleaned by a method approved by the Engineer to remove all dirt, grease, glaze, or any other material that would reduce the adhesion of the markings with minimum or no damage to the pavement surface. New portland cement concrete pavements shall be air-blast-cleaned to remove all latents.

Widths, lengths, and shapes of the cleaned surface shall be of sufficient size to include the full area of the specified pavement marking to be placed.

The cleaning operation shall be a continuous moving operation process with minimum interruption to traffic.

Markings shall be applied to the cleaned surfaces on the same calendar day. If this cannot be accomplished, the surface shall be re-cleaned prior to applying the markings. No markings shall be applied until the Engineer approves the cleaning.

The pavement markings shall be applied to the cleaned road surface, during conditions of dry weather and subsequently dry pavement surfaces at a minimum uniform wet thickness of 15 mils (0.4 mm) according to the manufacturer's installation instructions. On new hot-mix asphalt (HMA) surfaces the pavement markings shall be applied at a minimum uniform wet thickness of 20 mils (0.5 mm). The application of and combination of reflective media (glass beads and/or reflective elements) shall be applied at a rate specified by the manufacturer. At the time of installation the pavement surface temperature and the ambient temperature shall be above 40 °F (4 °C) and rising. The pavement markings shall not be applied if the pavement shows any visible signs of moisture or it is anticipated that damage causing moisture, such as rain showers, may occur during the installation and set periods. The Engineer will determine the atmospheric conditions and pavement surface conditions that produce satisfactory results.

Using the application equipment, the pavement markings shall be applied in the following manner, as a simultaneous operation:

- (a) The surface shall be air-blasted to remove any dirt and residue.
- (b) The resin shall be mixed and heated according to manufacturer's recommendations and sprayed onto the pavement surface.

The edge of the center line or lane line shall be offset a minimum distance of 2 in. (50 mm) from a longitudinal crack or joint. Edge lines shall be approximately 2 in. (50 mm) from the edge of pavement. The finished center and lane lines shall be straight, with the lateral deviation of any 10 ft (3 m) line not to exceed 1 in. (25 mm).

**Notification.** The Contractor shall notify the Engineer 72 hours prior to the placement of the markings in order that he/she can be present during the operation. At the time of notification, the Contractor shall provide the Engineer the manufacturer and lot numbers of polyurea and reflective media that will be used.

**Inspection.** The polyurea pavement markings will be inspected following installation according to Article 780.10 of the Standard Specifications, except, no later than December 15, and inspected following a winter performance period that extends 180 days from December 15.

**Method of Measurement.** This work will be measured for payment in place, in feet (meters). Double yellow lines will be measured as two separate lines.

**Basis of Payment.** This work will be paid for at the contract unit price per foot (meter) for POLYUREA PAVEMENT MARKING TYPE I – LINE of the line width specified or for POLYUREA PAVEMENT MARKING TYPE II – LINE of the line width specified.

### **Portland cement Concrete plants (BDE)**

Effective: January 1, 2007

Add the following to Article 1020.11(a) of the Standard Specifications.

- “(9) Use of Multiple Plants in the Same Construction Item. The Contractor may simultaneously use central-mixed, truck-mixed, and shrink-mixed concrete from more than one plant, for the same construction item, on the same day, and in the same pour. However, the following criteria shall be met.
- a. Each plant shall use the same cement, finely divided minerals, aggregates, admixtures, and fibers.
  - b. Each plant shall use the same mix design. However, material proportions may be altered slightly in the field to meet slump and air content criteria. Field water adjustments shall not result in a difference that exceeds 0.02 between plants for water/cement ratio. The required cement factor for central-mixed concrete shall be increased to match truck-mixed or shrink-mixed concrete, if the latter two types of mixed concrete are used in the same pour.
  - c. The maximum slump difference between deliveries of concrete shall be 3/4 in. (19 mm) when tested at the jobsite. If the difference is exceeded, but test results

are within specification limits, the concrete may be used. The Contractor shall take immediate corrective action and shall test subsequent deliveries of concrete until the slump difference is corrected. For each day, the first three truck loads of delivered concrete from each plant shall be tested for slump by the Contractor. Thereafter, when a specified test frequency for slump is to be performed, it shall be conducted for each plant at the same time.

- d. The maximum air content difference between deliveries of concrete shall be 1.5 percent when tested at the jobsite. If the difference is exceeded, but test results are within specification limits, the concrete may be used. The Contractor shall take immediate corrective action and shall test subsequent deliveries of concrete until the air content difference is corrected. For each day, the first three truck loads of delivered concrete from each plant shall be tested for air content by the Contractor. Thereafter, when a specified test frequency for air content is to be performed, it shall be conducted for each plant at the same time.
- e. Strength tests shall be performed and taken at the jobsite for each plant. When a specified strength test is to be performed, it shall be conducted for each plant at the same time. The difference between plants for their mean strength shall not exceed 450 psi (3100 kPa) compressive and 80 psi (550 kPa) flexural. The strength standard deviation for each plant shall not exceed 650 psi (4480 kPa) compressive and 110 psi (760 kPa) flexural. The mean and standard deviation requirements shall apply to the test of record. If the strength difference requirements are exceeded, the Contractor shall take corrective action.
- f. The maximum haul time difference between deliveries of concrete shall be 15 minutes. If the difference is exceeded, but haul time is within specification limits, the concrete may be used. The Contractor shall take immediate corrective action and check subsequent deliveries of concrete until the haul time difference is corrected.”

**precast concrete handling holes (BDE)**

Effective: January 1, 2007

Add the following to Article 540.02 of the Standard Specifications:

“(g) Handling Hole Plugs..... 1042.16“

Add the following paragraph after the sixth paragraph of Article 540.06 of the Standard Specifications:

“Handling holes shall be filled with a precast concrete plug and sealed with mastic or mortar, or filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation. When metal lifting inserts are used, their sockets shall be filled with mastic or mortar.”

Add the following to Article 542.02 of the Standard Specifications:

“(ee) Handling Hole Plugs ..... 1042.16”

Revise the fifth paragraph of Article 542.04(d) of the Standard Specifications to read:

“Handling holes in concrete pipe shall be filled with a precast concrete plug and sealed with mastic or mortar; or filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation.”

Add the following to Article 550.02 of the Standard Specifications:

“(o) Handling Hole Plugs..... 1042.16”

Replace the fourth sentence of the fifth paragraph of Article 550.06 of the Standard Specifications with the following:

“Handling holes in concrete pipe shall be filled with a precast concrete plug and sealed with mastic or mortar; or filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation.”

Add the following to Article 602.02 of the Standard Specifications:

“(p) Handling Hole Plugs..... 1042.16(a)”

Replace the fifth sentence of the first paragraph of Article 602.07 of the Standard Specifications with the following:

“Handling holes shall be filled with a precast concrete plug and sealed with mastic or mortar. The plug shall not project beyond the inside surface after installation. When metal lifting inserts are used, their sockets shall be filled with mastic or mortar.”

Add the following to Section 1042 of the Standard Specifications:

**“1042.16 Handling Hole Plugs.** Plugs for handling holes in precast concrete products shall be as follows.

- (a) Precast Concrete Plug. The precast concrete plug shall have a tapered shape and shall have a minimum compressive strength of 3000 psi (20,700 kPa) at 28 days.
- (b) Polyethylene Plug. The polyethylene plug shall have a “mushroom” shape with a flat round top and a stem with three different size ribs. The plug shall fit snugly and cover the handling hole.

The plug shall be according to the following.

Mechanical Properties	Test Method	Value (min.)
Flexural Modulus	ASTM D 790	3300 psi (22,750 kPa)
Tensile Strength (Break)	ASTM D 638	1600 psi (11,030 kPa)
Tensile Strength (Yield)	ASTM D 638	1200 psi (8270 kPa)

Thermal Properties	Test Method	Value (min.)
Brittle Temperature	ASTM D 746	-49 °F (-45 °C)
Vicat Softening Point	ASTM D 1525	194 °F (90 °C)

**reclaimed asphalt pavement (RAP) (Bde)**

Effective: January 1, 2007

Revised: August 1, 2007

In Article 1030.02(g), delete the last sentence of the first paragraph in (Note 2).

Revise Section 1031 of the Standard Specifications to read:

**“SECTION 1031. RECLAIMED ASPHALT PAVEMENT**

**1031.01 Description.** Reclaimed asphalt pavement (RAP) is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded 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.

**1031.02 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 to provide verification of the quality of the RAP to clarify appropriate stockpile.

- (a) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent 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 “homogenous” with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.
- (b) Conglomerate 5/8. Conglomerate 5/8 RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate 5/8 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 5/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

- (c) Conglomerate 3/8. Conglomerate 3/8 RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least B quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate 3/8 RAP shall be processed prior to testing by crushing to where all RAP shall pass the 3/8 in. (9.5 mm) or smaller screen. Conglomerate 3/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (d) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from Class I, Superpave (High or Low ESAL), HMA (High or Low ESAL), or equivalent mixtures. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (e) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP 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.

**1031.03 Testing.** When used in HMA, the RAP shall be sampled and tested either during or after 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).

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 pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

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

- (a) Testing Conglomerate 3/8. In addition to the requirements above, conglomerate 3/8 RAP shall be tested for maximum theoretical specific gravity ( $G_{mm}$ ) at a 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).

- (b) Evaluation of 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	Homogeneous / Conglomerate	Conglomerate "D" Quality
1 in. (25 mm)		$\pm 5 \%$
1/2 in. (12.5 mm)	$\pm 8 \%$	$\pm 15 \%$
No. 4 (4.75 mm)	$\pm 6 \%$	$\pm 13 \%$
No. 8 (2.36 mm)	$\pm 5 \%$	
No. 16 (1.18 mm)		$\pm 15 \%$
No. 30 (600 $\mu\text{m}$ )	$\pm 5 \%$	
No. 200 (75 $\mu\text{m}$ )	$\pm 2.0 \%$	$\pm 4.0 \%$
Asphalt Binder	$\pm 0.4 \%$ <sup>1/</sup>	$\pm 0.5 \%$
$G_{mm}$	$\pm 0.02$ <sup>2/</sup>	

1/ The tolerance for conglomerate 3/8 shall be  $\pm 0.3 \%$ .

2/ Applies only to conglomerate 3/8. When variation of the  $G_{mm}$  exceeds the  $\pm 0.02$  tolerance, a new conglomerate 3/8 stockpile shall be created which will also require an additional mix design.

If more than 20 percent of the individual sieves are out of the gradation tolerances, or if more than 20 percent of the asphalt binder content test results fall outside the appropriate tolerances, the RAP shall not be used in HMA unless the RAP 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 Illinois Test Procedure, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

**1031.04 Quality Designation of Aggregate in RAP.** The quality of the RAP shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

- (a) RAP from Class I, Superpave (High ESAL), or HMA (High ESAL) surface mixtures are designated as containing Class B quality coarse aggregate.
- (b) RAP from Superpave (Low ESAL)/HMA (Low ESAL) IL-19.0L binder and IL-9.5L surface mixtures are designated as Class D quality coarse aggregate.
- (c) RAP from Class I, Superpave (High ESAL), or HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.

(d) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

**1031.05 Use of RAP in HMA.** The use of RAP in HMA shall be as follows.

- (a) 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.
- (b) Steel Slag Stockpiles. RAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) surface mixtures only.
- (c) Use in HMA Surface Mixtures (High and Low ESAL). RAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be either homogeneous or conglomerate 3/8, in which the coarse aggregate is Class B quality or better.
- (d) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be homogeneous, conglomerate 5/8, or conglomerate 3/8, in which the coarse aggregate is Class C quality or better.
- (e) Use in Shoulders and Subbase. RAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be homogeneous, conglomerate 5/8, conglomerate 3/8, or conglomerate DQ.
- (f) The use of RAP shall be a contractor's option when constructing HMA in all contracts. When the contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in the table for a given N Design.

Max RAP Percentage

HMA MIXTURES <sup>1/, 3/</sup>	MAXIMUM % RAP		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified
30	30	30	10
50	25	15	10
70	15 / 25 <sup>2/</sup>	10 / 15 <sup>2/</sup>	10
90	10	10	10
105	10	10	10

1/ For HMA Shoulder and Stabilized Sub-Base (HMA) N-30, the amount of RAP shall not exceed 50% of the mixture.

2/ Value of Max % RAP if 3/8 RAP is utilized.

- 3/ When RAP exceeds 20%, the high & low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25% RAP would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28).

**1031.06 HMA Mix Designs.** At the Contractor's option, HMA mixtures may be constructed utilizing RAP material meeting the above detailed requirements.

RAP designs shall be submitted for volumetric verification. If additional RAP 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 stockpile and HMA mix design, and meets all of the requirements herein, the additional RAP stockpiles may be used in the original mix design at the percent previously verified.

**1031.07 HMA Production.** The coarse aggregate in all RAP 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, 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 material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If the RAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP and either switch to the virgin aggregate design or submit a new RAP design. When producing mixtures containing conglomerate 3/8 RAP, a positive dust control system shall be utilized.

HMA plants utilizing RAP shall be capable of automatically recording and printing the following information.

(a) Dryer Drum Plants.

- (1) Date, month, year, and time to the nearest minute for each print.
- (2) HMA mix number assigned by the Department.
- (3) Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- (4) Accumulated dry weight of RAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- (5) Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.
- (6) Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.

(7) Residual asphalt binder in the RAP material as a percent of the total mix to the nearest 0.1 percent.

(8) Aggregate and RAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAP are printed in wet condition.)

(b) Batch Plants.

(1) Date, month, year, and time to the nearest minute for each print.

(2) HMA mix number assigned by the Department.

(3) Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).

(4) Mineral filler weight to the nearest pound (kilogram).

(5) RAP weight to the nearest pound (kilogram).

(6) Virgin asphalt binder weight to the nearest pound (kilogram).

(7) Residual asphalt binder in the RAP 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.

**1031.08 RAP in Aggregate Surface Course and Aggregate Shoulders.** The use of RAP in aggregate surface course and aggregate shoulders shall be as follows.

(a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Other". The testing requirements of Article 1031.03 shall not apply.

(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."

**reflective sheeting ON CHANNELIZING DEVICES (BDE)**

Effective: April 1, 2007

Revise the seventh paragraph of Article 1106.02 of the Standard Specifications to read:

"At the time of manufacturing, the retroreflective prismatic sheeting used on channelizing devices shall meet or exceed the initial minimum coefficient of retroreflection as specified in the following table. Measurements shall be conducted according to ASTM E 810, without

averaging. Sheeting used on cones, drums and flexible delineators shall be reboundable as tested according to ASTM D 4956. Prestriped sheeting for rigid substrates on barricades shall be white and orange.

Initial Minimum Coefficient of Retroreflection candelas/foot candle/sq ft (candelas/lux/sq m) of material				
Observation Angle (deg.)	Entrance Angle (deg.)	White	Orange	Fluorescent Orange
0.2	-4	365	160	150
0.2	+30	175	80	70
0.5	-4	245	100	95
0.5	+30	100	50	40"

Revise the first sentence of the first paragraph of Article 1106.02(c) of the Standard Specifications to read:

“Barricades and vertical panels shall have alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass.”

Revise the third sentence of the first paragraph of Article 1106.02(d) of the Standard Specifications to read:

“The bottom panels shall be 8 x 24 in. (200 x 600 mm) with alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass.”

**REINFORCEMENT BARS (BDE)**

Effective: November 1, 2005

Revised: January 1, 2007

Revise Article 1006.10(a) of the Standard Specifications to read:

“(a) Reinforcement Bars. Reinforcement bars will be accepted according to the current Bureau of Materials and Physical Research Policy Memorandum, “Reinforcement Bar and Dowel Bar Plant Certification Procedure”. The Department will maintain an approved list of producers.

(1) Reinforcement Bars (Non-Coated). Reinforcement bars shall be according to ASTM A 706 (A 706M), Grade 60 (420) for deformed bars and the following.

a. Chemical Composition. The chemical composition of the bars shall be according to the following table.

CHEMICAL COMPOSITION		
Element <sup>1/</sup>	Heat Analysis (% maximum)	Product Analysis (% maximum)
Carbon	0.30	0.33
Manganese	1.50	1.56
Phosphorus	0.035	0.045
Sulfur	0.045	0.055
Silicon	0.50	0.55
Nickel	<sup>2/</sup>	<sup>2/</sup>
Chromium	<sup>2/</sup>	<sup>2/</sup>
Molybdenum	<sup>2/</sup>	<sup>2/</sup>
Copper	<sup>2/</sup>	<sup>2/</sup>
Titanium	<sup>2/</sup>	<sup>2/</sup>
Vanadium	<sup>2/</sup>	<sup>2/</sup>
Columbium	<sup>2/</sup>	<sup>2/</sup>
Aluminum	<sup>2/</sup> , <sup>3/</sup>	<sup>2/</sup> , <sup>3/</sup>
Tin <sup>4/</sup>	0.040	0.044

Note 1/. The bars shall not contain any traces of radioactive elements.

Note 2/. There is no composition limit but the element must be reported.

Note 3/. If aluminum is not an intentional addition to the steel for deoxidation or killing purposes, residual aluminum content need not be reported.

Note 4/. If producer bar testing indicates an elongation of 15 percent or more and passing of the bend test, the tin composition requirement may be waived.

- b. Heat Numbers. Bundles or bars at the construction site shall be marked or tagged with heat identification numbers of the bar producer.
  - c. Guided Bend Test. Bars may be subject to a guided bend test across two pins which are free to rotate, where the bending force shall be centrally applied with a fixed or rotating pin of a certain diameter as specified in Table 3 of ASTM A 706 (A 706M). The dimensions and clearances of this guided bend test shall be according to ASTM E 190.
  - d. Spiral Reinforcement. Spiral reinforcement shall be deformed or plain bars conforming to the above requirements or cold-drawn steel wire conforming to AASHTO M 32.
- (2) Epoxy Coated Reinforcement Bars. Epoxy coated reinforcement bars shall be according to Article 1006.10(a)(1) and shall be epoxy coated according to AASHTO M 284 (M 284M) and the following.

- a. Certification. The epoxy coating applicator shall be certified under the Concrete Reinforcing Steel Institute's (CRSI) Epoxy Plant Certification Program.
- b. Coating Thickness. The thickness of the epoxy coating shall be 7 to 12 mils (0.18 to 0.30 mm). When spiral reinforcement is coated after fabrication, the thickness of the epoxy coating shall be 7 to 20 mils (0.18 to 0.50 mm).
- c. Cutting Reinforcement. Reinforcement bars may be sheared or sawn to length after coating, providing the end damage to the coating does not extend more than 0.5 in. (13 mm) back and the cut is patched before any visible rusting appears. Flame cutting will not be permitted."

**SEEDING (BDE)**

Effective: July 1, 2004

Revised: August 1, 2007

Revise the following seeding mixtures shown in Table 1 of Article 250.07 of the Standard Specifications to read:

"Table 1 - SEEDING MIXTURES		
Class – Type	Seeds	lb/acre (kg/hectare)
2 Roadside Mixture 7/	Tall Fescue (Inferno, Tarheel II, Quest, Blade Runner, or Falcon IV)	100 (110)
	Perennial Ryegrass	50 (55)
	Creeping Red Fescue	40 (50)
	Red Top	10 (10)
2A Salt Tolerant Roadside Mixture 7/	Tall Fescue (Inferno, Tarheel II, Quest, Blade Runner, or Falcon IV)	60 (70)
	Perennial Ryegrass	20 (20)
	Red Fescue (Audubon, Sea Link, or Epic)	30 (20)
	Hard Fescue (Rescue 911, Spartan II, or Reliant IV)	30 (20)
	Fults Salt Grass 1/	60 (70)"

Revise Table II of Article 1081.04(c)(6) of the Standard Specifications to read:

TABLE II						
Variety of Seeds	Hard Seed %	Purity %	Pure Live Seed %	Weed %	Secondary * Noxious Weeds No. per oz (kg)	Notes
	Max.	Min.	Min.	Max.	Max. Permitted	
Alfalfa	20	92	89	0.50	6 (211)	1/
Clover, Alsike	15	92	87	0.30	6 (211)	2/
Red Fescue, Audubon	0	97	82	0.10	3 (105)	-
Red Fescue, Creeping	-	97	82	1.00	6 (211)	-
Red Fescue, Epic	-	98	83	0.05	1 (35)	-
Red Fescue, Sea Link	-	98	83	0.10	3 (105)	-
Tall Fescue, Blade Runner	-	98	83	0.10	2 (70)	-
Tall Fescue, Falcon IV	-	98	83	0.05	1 (35)	-
Tall Fescue, Inferno	0	98	83	0.10	2 (70)	-
Tall Fescue, Tarheel II	-	97	82	1.00	6 (211)	-
Tall Fescue, Quest	0	98	83	0.10	2 (70)	-
Fults Salt Grass	0	98	85	0.10	2 (70)	-
Kentucky Bluegrass	-	97	80	0.30	7 (247)	4/
Oats	-	92	88	0.50	2 (70)	3/
Redtop	-	90	78	1.80	5 (175)	3/
Ryegrass, Perennial, Annual	-	97	85	0.30	5 (175)	3/
Rye, Grain, Winter	-	92	83	0.50	2 (70)	3/
Hard Fescue, Reliant IV	-	98	83	0.05	1 (35)	-
Hard Fescue, Rescue 911	0	97	82	0.10	3 (105)	-
Hard Fescue, Spartan II	-	98	83	0.10	3 (105)	-
Timothy	-	92	84	0.50	5 (175)	3/
Wheat, hard Red Winter	-	92	89	0.50	2 (70)	3/

Revise the first sentence of the first paragraph of Article 1081.04(c)(7) of the Standard Specifications to read:

“The seed quantities indicated per acre (hectare) for Prairie Grass Seed in Classes 3, 3A, 4, 4A, 6, and 6A in Article 250.07 shall be the amounts of pure, live seed per acre (hectare) for each species listed.”

**Self-consolidating CONCRETE for cast-in-place construction (BDE)**

Effective: November 1, 2005

Revised: January 1, 2007

Definition. Self-consolidating concrete is a flowable mixture that does not require mechanical vibration for consolidation.

Usage. Self-consolidating concrete may be used for cast-in-place concrete construction items involving Class MS, DS, and SI concrete.

Materials. Materials shall be according to Section 1021 of the Standard Specifications.

Mix Design Criteria. Article 1020.04 of the Standard Specifications shall apply, except as follows:

- (a) The cement factor shall be according to Article 1020.04 of the Standard Specifications. If the maximum cement factor is not specified, it shall not exceed 7.05 cwt/cu yd (418 kg/cu m). The cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used.
- (b) The maximum allowable water/cement ratio shall be according to Article 1020.04 of the Standard Specifications or 0.44, whichever is lower.
- (c) The slump requirements shall not apply.
- (d) The coarse aggregate gradations shall be CA 13, CA 14, CA 16, or a blend of these gradations. CA 11 may be used when the Contractor provides satisfactory evidence to the Engineer that the mix will not segregate. The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used.
- (e) The slump flow range shall be  $\pm 2$  in. ( $\pm 50$  mm) of the Contractor target value, and within the overall Department range of 20 in. (510 mm) minimum to 28 in. (710 mm) maximum.
- (f) The visual stability index shall be a maximum of 1.
- (g) The J-ring value shall be a maximum of 4 in. (100 mm). The Contractor may specify a lower maximum in the mix design.
- (h) The L-box blocking ratio shall be a minimum of 60 percent. The Contractor may specify a higher minimum in the mix design.
- (i) The column segregation index shall be a maximum 15 percent.
- (j) The hardened visual stability index shall be a maximum of 1.

Test Methods. Illinois Test Procedures SCC-1, SCC-2, SCC-3, SCC-4, SCC-5, SCC-6, and Illinois Modified AASHTO T 22, 23, 121, 126, 141, 152, 177, 196, and 309 shall be used for testing of self-consolidating concrete mixtures.

Mix Design Submittal. The Contractor's Level III PCC Technician shall submit a mix design according to the "Portland Cement Concrete Level III Technician" course manual, except target slump information is not applicable and will not be required. However, a slump flow target range shall be submitted. In addition, the design mortar factor may exceed 1.10 and durability test data will be waived.

A J-ring value shall be submitted if a lower mix design maximum will apply. An L-box blocking ratio shall be submitted if a higher mix design minimum will apply. The Contractor shall also indicate applicable construction items for the mix design.

Trial mixture information will be required by the Engineer. A trial mixture is a batch of concrete tested by the Contractor to verify the Contractor's mix design will meet specification requirements. Trial mixture information shall include test results as specified in the "Portland

Cement Concrete Level III Technician” course manual. Test results shall also include slump flow, visual stability index, J-ring value, L-box blocking ratio, column segregation index, and hardened visual stability index. For the trial mixture, the slump flow shall be near the midpoint of the proposed slump flow target range.

Trial Batch. A minimum 2 cu yd (1.5 cu m) trial batch shall be produced, and the self-consolidating concrete admixture dosage proposed by the Contractor shall be used. The slump flow shall be within 1.0 in. (25 mm) of the maximum slump flow range specified by the Contractor, and the air content shall be within the top half of the allowable specification range.

The trial batch shall be scheduled a minimum of 21 calendar days prior to anticipated use and shall be performed in the presence of the Engineer.

The Contractor shall provide the labor, equipment, and materials to test the concrete. The mixture will be evaluated by the Engineer for strength, air content, slump flow, visual stability index, J-ring value, L-box blocking ratio, column segregation index, and hardened visual stability index.

Upon review of the test data from the trial batch, the Engineer will verify or deny the use of the mix design and notify the Contractor. Verification by the Engineer will include the Contractor's target slump flow range. If applicable, the Engineer will verify the Contractor's maximum J-ring value and minimum L-box blocking ratio.

A new trial batch will be required whenever there is a change in the source of any component material, proportions beyond normal field adjustments, dosage of the self-consolidating concrete admixture, batch sequence, mixing speed, mixing time, or as determined by the Engineer. The testing criteria for the new trial batch will be determined by the Engineer.

When necessary, the trial batches shall be disposed of according to Article 202.03 of the Standard Specifications.

Mixing Portland Cement Concrete. In addition to Article 1020.11 of the Standard Specifications, the mixing time for central-mixed concrete shall not be reduced as a result of a mixer performance test. Truck-mixed or shrink-mixed concrete shall be mixed in a truck mixer for a minimum of 100 revolutions.

Wash water, if used, shall be completely discharged from the drum or container before the succeeding batch is introduced.

The batch sequence, mixing speed, and mixing time shall be appropriate to prevent cement balls and mix foaming for central-mixed, truck-mixed, and shrink-mixed concrete.

Falsework and Forms. In addition to Articles 503.05 and 503.06 of the Standard Specifications, the Contractor shall consider the fluid nature of the concrete for designing the falsework and forms. Forms shall be tight to prevent leakage of fluid concrete.

Placing and Consolidating. Concrete placement and consolidation shall be according to Article 503.07 of the Standard Specifications, except as follows:

Revise the third paragraph of Article 503.07 of the Standard Specifications to read:

“Open troughs and chutes shall extend as nearly as practicable to the point of deposit. The drop distance of concrete shall not exceed 5 ft (1.5 m). If necessary, a tremie shall be used to meet this requirement. The maximum distance of horizontal flow from the point of deposit shall be 25 ft (7.6 m), unless approved otherwise by the Engineer. For drilled shafts, free fall placement will not be permitted.”

Delete the seventh, eighth, ninth, and tenth paragraphs of Article 503.07 of the Standard Specifications.

Add to the end of the eleventh paragraph of Article 503.07 of the Standard Specifications the following:

“Concrete shall be rodded with a piece of lumber, conduit, or vibrator if the material has lost its fluidity prior to placement of additional concrete. The vibrator shall be the pencil head type with a maximum diameter or width of 1 in. (25 mm). Any other method for restoring the fluidity of the concrete shall be approved by the Engineer.”

Quality Control by Contractor at Plant. The specified test frequencies for aggregate gradation, aggregate moisture, air content, unit weight/yield, and temperature shall be performed as indicated in the contract plans.

Slump flow, visual stability index, and J-ring or L-box tests shall be performed as needed to control production. The column segregation index test and hardened visual stability index test will not be required to be performed at the plant.

Quality Control by Contractor at Jobsite. The specified test frequencies for air content, strength, and temperature shall be performed as indicated in the contract plans.

Slump flow, visual stability index, and J-ring or L-box tests shall be performed on the first two truck deliveries of the day, and every 50 cu yd (40 cu m) thereafter. The Contractor shall select either the J-ring or L-box test for jobsite testing.

The column segregation index test will not be required to be performed at the jobsite. The hardened visual stability index test shall be performed on the first truck delivery of the day, and every 300 cu yd (230 cu m) thereafter. Slump flow, visual stability index, J-ring value or L-box blocking ratio, air content, and concrete temperature shall be recorded for each hardened visual stability index test.

The Contractor shall retain all hardened visual stability index cut cylinder specimens until the Engineer notifies the Contractor that the specimens may be discarded.

If mix foaming or other potential detrimental material is observed during placement or at the completion of the pour, the material shall be removed while the concrete is still plastic.

Quality Assurance by Engineer at Plant. For air content and aggregate gradation, quality assurance independent sample testing and split sample testing will be performed as indicated in the contract plans.

For slump flow, visual stability index, and J-ring or L-box tests, quality assurance independent sample testing and split sample testing will be performed as determined by the Engineer.

Quality Assurance by Engineer at Jobsite. For air content and strength, quality assurance independent sample testing and split sample testing will be performed as indicated in the contract plans.

For slump flow, visual stability index, J-ring or L-box, and hardened visual stability index tests, quality assurance independent sample testing will be performed as determined by the Engineer.

For slump flow and visual stability index quality assurance split sample testing, the Engineer will perform tests at the beginning of the project on the first three tests performed by the Contractor. Thereafter, a minimum of ten percent of total tests required of the Contractor will be performed per plant, which will include a minimum of one test per mix design. The acceptable limit of precision will be 1.5 in. (40 mm) for slump flow and a limit of precision will not apply to the visual stability index.

For the J-ring or the L-box quality assurance split sample testing, a minimum of 80 percent of the total tests required of the Contractor will be witnessed by the Engineer per plant, which will include a minimum of one witnessed test per mix design. The Engineer reserves the right to conduct quality assurance split sample testing. The acceptable limit of precision will be 1.5 in. (40 mm) for the J-ring value and ten percent for the L-box blocking ratio.

For each hardened visual stability index test performed by the Contractor, the cut cylinders shall be presented to the Engineer for determination of the rating. The Engineer reserves the right to conduct quality assurance split sample testing. A limit of precision will not apply to the hardened visual stability index.

### **Self-consolidating CONCRETE for precast products (BDE)**

Effective: July 1, 2004

Revised: January 1, 2007

Definition. Self-consolidating concrete is a flowable mixture that does not require mechanical vibration for consolidation.

Usage. Self-consolidating concrete may be used for precast concrete products.

Materials. Materials shall be according to Section 1021 of the Standard Specifications.

Mix Design Criteria. The mix design criteria shall be as follows:

- (a) The minimum cement factor shall be according to Article 1020.04 of the Standard Specifications. If the maximum cement factor is not specified, it shall not exceed 7.05 cwt/cu yd (418 kg/cu m).
- (b) The maximum allowable water/cement ratio shall be according to Article 1020.04 of the Standard Specifications or 0.44, whichever is lower.

- (c) The slump requirements of Article 1020.04 of the Standard Specifications shall not apply.
- (d) The coarse aggregate gradations shall be CA 13, CA 14, CA 16, or a blend of these gradations. CA 11 may be used when the Contractor provides satisfactory evidence to the Engineer that the mix will not segregate. The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used.
- (e) The slump flow range shall be  $\pm 2$  in. ( $\pm 50$  mm) of the Contractor target value, and within the overall Department range of 20 in. (510 mm) minimum to 28 in. (710 mm) maximum.
- (f) The visual stability index shall be a maximum of 1.
- (g) The J-ring value shall be a maximum of 4 in. (100 mm). The Contractor may specify a lower maximum in the mix design.
- (h) The L-box blocking ratio shall be a minimum of 60 percent. The Contractor may specify a higher minimum in the mix design.
- (i) The column segregation index shall be a maximum 15 percent.
- (j) The hardened visual stability index shall be a maximum of 1.

Placing and Consolidating. The maximum distance of horizontal flow from the point of deposit shall be 25 ft (7.6 m), unless approved otherwise by the Engineer.

Concrete shall be rodded with a piece of lumber, conduit, or vibrator if the material has lost its fluidity prior to placement of additional concrete. The vibrator shall be the pencil head type with a maximum diameter or width of 1 in. (25 mm). Any other method for restoring the fluidity of the concrete shall be approved by the Engineer.

Mix Design Approval. The Contractor shall obtain mix design approval according to the Department's Policy Memorandum "Quality Control/Quality Assurance Program for Precast Concrete Products".

### **Steel Plate Beam Guardrail (BDE)**

Effective: November 1, 2005

Revised: August 1, 2007

Revise the first paragraph of Article 1006.25 of the Standard Specifications to read:

**"1006.25 Steel Plate Beam Guardrail.** Steel plate beam guardrail, including bolts, nuts, and washers, shall be according to AASHTO M 180. The guardrail shall be Class A, with a Type II galvanized coating; except the weight (mass) of the coating for each side of the guardrail shall be at least 2.00 oz/sq ft (610 g/sq m). The coating will be determined for each side of the guardrail using the average of at least three non-destructive test readings taken on that side of the guardrail. The minimum average thickness for each side shall be 3.4 mils (86  $\mu$ m)."

**SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)**

Effective: April 2, 2005

To account for the preparatory work and operations necessary for the movement of subcontractor personnel, equipment, supplies, and incidentals to the project site and for all other work or operations that must be performed or costs incurred when beginning work approved for subcontracting in accordance with Article 108.01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be equal to 3 percent of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

This provision shall be incorporated directly or by reference into each subcontract approved by the Department.

**TEMPORARY EROSION CONTROL (BDE)**

Effective: November 1, 2002

Revised: August 1, 2007

Revise the third paragraph of Article 280.03 of the Standard Specifications to read:

"Erosion control systems shall be installed prior to beginning any activities which will potentially create erodible conditions. Erosion control systems for areas outside the limits of construction such as storage sites, plant sites, waste sites, haul roads, and Contractor furnished borrow sites shall be installed prior to beginning soil disturbing activities at each area. These offsite systems shall be designed by the Contractor and be subject to the approval of the Engineer."

Add the following paragraph after the third paragraph of Article 280.03 of the Standard Specifications:

"The temporary erosion and sediment control systems shown on the plans represent the minimum systems anticipated for the project. Conditions created by the Contractor's operations, or for the Contractor's convenience, which are not covered by the plans, shall be protected as directed by the Engineer at no additional cost to the Department. Revisions or modifications of the erosion and sediment control systems shall have the Engineer's written approval."

Revise the second sentence of the first paragraph of Article 280.04(a) of the Standard Specifications to read:

"Temporary ditch checks shall be constructed with rolled excelsior, products from the Department's approved list, or with aggregate when specified."

Add the following paragraph after the ninth paragraph of Article 280.07 of the Standard Specifications:

“Temporary or permanent erosion control systems required for areas outside the limits of construction will not be measured for payment.”

Delete the tenth (last) paragraph of Article 280.08 of the Standard Specifications.

Revise Article 1081.15(f) of the Standard Specifications to read:

“(f) Rolled Excelsior. Rolled excelsior shall consist of an excelsior fiber filling totally encased inside netting and sealed with metal clips or knotted at the ends. Each roll shall be a minimum of 20 in. (500 mm) in diameter and a minimum of 10 ft (3 m) in length. Each 10 ft (3 m) roll shall have a minimum weight (mass) of 30 lbs (13.6 kg). The excelsior fiber filling shall be weed free. At least 80 percent of the fibers shall be a minimum of 6 in. (150 mm) in length. The fiber density shall be a minimum of 1.38 lb/cu ft (22 kg/cu m). The netting shall be composed of a polyester or polypropylene material which retains 70 percent of its strength after 500 hours of exposure to sunlight. The maximum opening of the net shall be 1 x 1 in. (25 x 25 mm).”

### **thermoplastic pavement markings (BDE)**

Effective: January 1, 2007

Revise Article 1095.01(a)(2) of the Standard Specifications to read:

“(2) Pigment. The pigment used for the white thermoplastic compound shall be a high-grade pure (minimum 93 percent) titanium dioxide (TiO<sub>2</sub>). The white pigment content shall be a minimum of ten percent by weight and shall be uniformly distributed throughout the thermoplastic compound.

The pigments used for the yellow thermoplastic compound shall not contain any hazardous materials listed in the Environmental Protection Agency Code of Federal Regulations (CFR) 40, Section 261.24, Table 1. The combined total of RCRA listed heavy metals shall not exceed 100 ppm when tested by X-ray fluorescence spectroscopy. The pigments shall also be heat resistant, UV stable and color-fast yellows, golds, and oranges, which shall produce a compound which shall match Federal Standard 595 Color No. 33538. The pigment shall be uniformly distributed throughout the thermoplastic compound.”

Revise Article 1095.01(b)(1)e. of the Standard Specifications to read:

“e. Daylight Reflectance and Color. The thermoplastic compound after heating for four hours ± five minutes at 425 ± 3 °F (218.3 ± 2 °C) and cooled at 77 °F (25 °C) shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degree circumferential/zero degree geometry, illuminant C, and two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

White: Daylight Reflectance .....75 percent min.  
\*Yellow: Daylight Reflectance .....45 percent min.

\*Shall meet the coordinates of the following color tolerance chart.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456"

Revise Article 1095.01(b)(1)k. of the Standard Specifications to read:

“k. Accelerated Weathering. After heating the thermoplastic for four hours  $\pm$  five minutes at  $425 \pm 3$  °F ( $218.3 \pm 2$  °C) the thermoplastic shall be applied to a steel wool abraded aluminum alloy panel (Federal Test Std. No. 141, Method 2013) at a film thickness of 30 mils (0.70 mm) and allowed to cool for 24 hours at room temperature. The coated panel shall be subjected to accelerated weathering using the light and water exposure apparatus (fluorescent UV - condensation type) for 75 hours according to ASTM G 53 (equipped with UVB-313 lamps).

The cycle shall consist of four hours UV exposure at 122 °F (50 °C) followed by four hours of condensation at 104 °F (40 °C). UVB 313 bulbs shall be used. At the end of the exposure period, the panel shall not exceed 10 Hunter Lab Delta E units from the original material.”

## TRAINING SPECIAL PROVISIONS

This Training Special Provision supersedes Section 7b of the Special Provision entitled “Specific Equal Employment Opportunity Responsibilities,” and is in implementation of 23 U.S.C. 140(a).

As part of the contractor’s equal employment opportunity affirmative action program, training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 10. In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor’s needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in

each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the

number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

METHOD OF MEASUREMENT The unit of measurement is in hours.

BASIS OF PAYMENT This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

**VARIABLY SPACED TINING (BDE)**

Effective: August 1, 2005

Revised: January 1, 2007

Revise the first sentence of the third paragraph of Article 420.09(e)(1) of the Standard Specifications to read:

“The metal comb shall consist of a single line of tempered spring steel tines variably spaced as shown in the table below and securely mounted in a suitable head.”

Revise the fifth sentence of the third paragraph of Article 420.09(e)(1) of the Standard Specifications to read:

“The tining device shall be operated so as to produce a pattern of grooves, 1/8 to 3/16 in. (3 to 5 mm) deep and 1/10 to 1/8 in. (2.5 to 3.2 mm) wide across the pavement. The tining device shall be operated at a 1:6 skew across the pavement for facilities with a posted speed limit of 55 mph or greater. The tining pattern shall not overlap or leave gaps between successive passes.”

Add the following table after the third paragraph of Article 420.09(e)(1) of the Standard Specifications:

“Center to Center Spacings of Metal Comb Tines in. (mm) (read spacings left to right)				
1 5/16 (34)	1 7/16 (36)	1 7/8 (47)	2 1/8 (54)	1 7/8 (48)
1 11/16 (43)	1 1/4 (32)	1 1/4 (31)	1 1/16 (27)	1 7/16 (36)
1 1/8 (29)	1 13/16 (46)	13/16 (21)	1 11/16 (43)	7/8 (23)
1 5/8 (42)	2 1/16 (52)	15/16 (24)	11/16 (18)	1 1/8 (28)
1 9/16 (40)	1 5/16 (34)	1 1/16 (27)	1 (26)	1 (25)
1 1/16 (27)	13/16 (20)	1 7/16 (37)	1 1/2 (38)	2 1/16 (52)
2 (51)	1 3/4 (45)	1 7/16 (37)	1 11/16 (43)	2 1/16 (53)
1 1/16 (27)	1 7/16 (37)	1 5/8 (42)	1 5/8 (41)	1 1/8 (29)
1 11/16 (43)	1 3/4 (45)	1 3/4 (44)	1 3/16 (30)	1 7/16 (37)
1 5/16 (33)	1 9/16 (40)	1 1/8 (28)	1 1/4 (31)	1 15/16 (50)
1 5/16 (34)	1 3/4 (45)	13/16 (20)	1 3/4 (45)	1 15/16 (50)
2 1/16 (53)	2 (51)	1 1/8 (29)	1 (25)	11/16 (18)
2 1/16 (53)	11/16 (18)	1 1/2 (38)	2 (51)	1 9/16 (40)
11/16 (17)	1 15/16 (49)	1 15/16 (50)	1 9/16 (39)	2 (51)
1 7/16 (36)	1 7/16 (36)	1 1/2 (38)	1 13/16 (46)	1 1/8 (29)
1 1/2 (38)	1 15/16 (50)	15/16 (24)	1 5/16 (33)”	

**Water Blaster with vacuum recovery (BDE)**

Effective: April 1, 2006

Revised: January 1, 2007

Add the following to Article 783.02 of the Standard Specifications.

“(c) Water Blaster with Vacuum Recovery ..... 1101.12”

Revise Article 1101.12 of the Standard Specifications to read.

“**1101.12 Water Blaster with Vacuum Recovery.** The water blaster shall remove the stripe from the pavement using a high pressurized water spray with a vacuum recovery system to provide a clean, almost dry surface, without the use of a secondary cleanup process. The

removal shall be to the satisfaction of the Engineer. The equipment shall contain a storage system that allows for the storage of the wastewater while retaining the debris. The operator shall be in immediate control of the blast head.”

### **MENTOR-PROTÉGÉ Program (BDE)**

Effective: June 1, 2007

Eligibility. This contract is eligible for the Department’s Mentor-Protégé Program for those bidders with an approved Mentor-Protégé Development Plan.

In order for a Mentor-Protégé relationship to be recognized as part of this contract, the Protégé shall be used as a subcontractor and a Mentor-Protégé Agreement for Contract Assistance and Training shall be fully executed and approved. The Mentor-Protégé Agreement for Contract Assistance and Training shall be completed on the form provided by the Department and submitted with the DBE Utilization Plan for approval by the Department. If approved, the Mentor-Protégé Agreement for Contract Assistance and Training shall become part of the contract. In the event the Mentor-Protégé Agreement for Contract Assistance and Training is not approved, the contract shall be performed in accordance with the DBE Utilization Plan exclusive of the Agreement.

DBE Goal Reduction. The DBE participation goal set for this contract may, at the discretion of the Department, be reduced according to the Mentor-Protégé Program Guidelines when the Protégé is used as a subcontractor. When submitting the DBE Utilization Plan, the bidder shall indicate whether the Protégé will be used as a subcontractor and to what extent.

Reimbursement of Mentor Expenses. The direct and indirect expenses of the Mentor, as detailed in the approved Mentor-Protégé Agreement for Contract Assistance and Training will be reimbursed by the Department.

### **EQUIPMENT RENTAL RATES (BDE)**

Effective: August 2, 2007

Replace the second and third paragraphs of Article 105.07(b)(4)a. of the Standard Specifications with the following:

“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).”

Replace Article 109.04(b)(4) of the Standard Specifications with the following:

“(4) Equipment. Equipment used for extra work shall be authorized by the Engineer. The equipment shall be specifically described, be of suitable size and capacity for the work to be performed, and be in good operating condition. For such equipment, the Contractor will be paid as follows.

- a. Contractor Owned Equipment. Contractor owned equipment will be paid for by the hour using the applicable rate from the "Equipment Watch Rental Rate Blue Book" (Blue Book). The applicable hourly rate is defined as the FHWA hourly rate, from the time period the force account work begins, adjusted for both the model year of the equipment and the Illinois region. The time allowed will be the actual time the equipment is operating on the extra work. For the time required to move the equipment to and from the site of the extra work and any authorized idle (standby) time, payment will be made according to:  $0.5 \times (\text{AHR} - \text{EOC})$ .

Where: AHR = Applicable Hourly Rate (defined above)  
EOC = Estimated Operating Costs per hour (from the Blue Book)

All time allowed shall fall within the working hours authorized for the extra work.

The rates above include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs, overhaul and maintenance of any kind, depreciation, storage, overhead, profits, insurance, and all incidentals. The rates do not include labor.

The Contractor shall submit to the Engineer sufficient information for each piece of equipment and its attachments to enable the Engineer to determine the proper equipment category. If a rate is not established in the Blue Book for a particular piece of equipment, the Engineer will establish a rate for that piece of equipment that is consistent with its cost and use in the industry.

- b. Rented Equipment. Whenever it is necessary for the Contractor to rent equipment to perform extra work, the rental and transportation costs of the equipment plus five percent for overhead will be paid. In no case shall the rental rates exceed those of established distributors or equipment rental agencies.

All prices shall be agreed to in writing before the equipment is used."

#### **BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE) (RETURN FORM WITH BID)**

Effective: November 2, 2006

Revised: January 2, 2007

Description. For projects with at least 1200 tons (1100 metric tons) of work involving applicable bituminous materials, cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and pavement preservation type surface treatments. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, or joint filling/sealing.

The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$$

- Where: CA = Cost Adjustment, \$.  
BPI<sub>P</sub> = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).  
BPI<sub>L</sub> = Bituminous Price Index, as published by the Department for the month prior to the letting, \$/ton (\$/metric ton).  
%AC<sub>V</sub> = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC<sub>V</sub> will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC<sub>V</sub> and undiluted emulsified asphalt will be considered to be 65% AC<sub>V</sub>.  
Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards:  $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$ . For HMA mixtures measured in square meters:  $Q, \text{ metric tons} = A \times D \times (G_{mb} \times 24.99) / 1000$ . When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different  $G_{mb}$  and % AC<sub>V</sub>.

For bituminous materials measured in gallons:  $Q, \text{ tons} = V \times 8.33 \text{ lb/gal} \times SG / 2000$   
For bituminous materials measured in liters:  $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times SG / 1000$

- Where: A = Area of the HMA mixture, sq yd (sq m).  
D = Depth of the HMA mixture, in. (mm).  
 $G_{mb}$  = Average bulk specific gravity of the mixture, from the approved mix design.  
V = Volume of the bituminous material, gal (L).  
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI<sub>L</sub> and BPI<sub>P</sub> in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(BPI_L - BPI_P) \div BPI_L\} \times 100$$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Return With Bid

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
BITUMINOUS MATERIALS COST ADJUSTMENTS**

The bidder shall submit this completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments. After award, this form, when submitted, shall become part of the contract.

**Contract No.:** \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Contractor's Option:**

Is your company opting to include this special provision as part of the contract?

Yes  No

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**steel cost adjustment (bde) (RETURN FORM WITH BID)**

Effective: April 2, 2004

Revised: April 1, 2007

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of steel cost adjustments.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)  
Structural Steel  
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), frames and grates, and other miscellaneous items will be subject to a steel cost adjustment when the pay item they are used in has a contract value of \$10,000 or greater.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) Evidence that increased or decreased steel costs have been passed on to the Contractor.
- (b) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.
- (c) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars  
Q = quantity of steel incorporated into the work, in lb (kg)  
D = price factor, in dollars per lb (kg)

$$D = CBP_M - CBP_L$$

Where:  $CBP_M$  = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the American Metal Market (AMM) for the day the steel is shipped from the mill. The indices will be converted from dollars per ton to dollars per lb (kg).

$CBP_L$  = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the AMM for the day the contract is let. The indices will be converted from dollars per ton to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the  $CBP_M$  will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the  $CBP_L$  and  $CBP_M$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(CBP_L - CBP_M) \div CBP_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

**Attachment**

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Mesh Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 - 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 - 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 - 15.2 m)	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 - 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 - 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 - 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 - 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)

Return With Bid

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
STEEL COST ADJUSTMENT**

The bidder shall submit this completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of steel cost adjustments. After award, this form, when submitted shall become part of the contract.

**Contract No.:** \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Contractor's Option:**

Is your company opting to include this special provision as part of the contract plans?

Yes  No

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

storm water pollution prevention plan

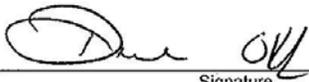
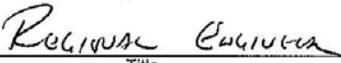


Storm Water Pollution Prevention Plan

Route FAP 335 Marked IL Route 60  
Section 119R-2 Project No. D-91-230-06  
County Lake Contract No. 60B01

This plan has been prepared to comply with the provisions of the NPDES Permit Number ILR10, issued by the Illinois Environmental Protection Agency for storm water discharges from Construction Site Activities. This plan has also been prepared to comply with provisions of NPDES Permit Number ILR400493.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

  
\_\_\_\_\_  
Signature  
  
  
\_\_\_\_\_  
Title

4-28-07  
\_\_\_\_\_  
Date

1. Site Description

- a. The following is a description of the construction activity which is the subject of this plan (use additional pages, as necessary):  
Widen and reconstruct IL 60, replace the structure over I-94 and improve the two nearby intersections of Riverwoods Boulevard/Riverwoods Road and Field Drive/Saunders Road. Widen roadway, new bridge, roadway paving, retaining walls, grading, excavation, tree removal, seeding, planting, trench excavation, and drainage improvements. Drainage improvements to include new scuppers, catch basins, manholes, storm sewers, restrictor manholes at sensitive outlets, four new culverts, replacement of existing culverts, swales, ditches, storm sewer outlets to ditches, inline storm water detention, slope drain outlets, and Impacts to approx. 0.0243 acres of a 1.23 acres marsh type wetland (FQI 8.7). The project occurs on existing and contiguous alignment, therefore, it qualifies to be processed as a Programmatic Action under IDOT's approved Wetlands Mitigation Action Plan.
- b. The following is a description of the intended sequence of major activities which will disturb soils for major portions of the construction site, such as grubbing, excavation and grading (use additional pages, as necessary):

The sequence is as follows:

- 1.) Installation of soil erosion and sediment control SE/SC measures. Install downslope and side slope perimeter controls before site demolition occurs.
    - a.) Selective vegetation removal for silt fence installation
    - b.) Silt fence installation
    - c.) Stabilized construction entrances
  - 2.) An area will not be disturbed until necessary for construction to proceed.
  - 3.) Tree removal where necessary (clear & grub)
  - 4.) Construct sediment trapping devices
  - 5.) Strip topsoil, stockpile topsoil
  - 6.) Temporarily stabilize topsoil stockpiles (seed and silt fence around toe of slope) as soon as possible.
  - 7.) Curb and gutter removal, pavement removal, bridge removal and underground utility removal.
  - 8.) Site grading and earth excavation
  - 9.) Install storm sewer and associated inlet & outlet protection, utility installation
  - 10.) Pavement installation and bridge construction
  - 11.) Temporarily stabilize all areas that have reached temporary grade
  - 12.) Install roadways
  - 13.) Permanently stabilize all disturbed areas.
  - 14.) Remove all temporary SE/SC measures after the site is stabilized with vegetation.
- \* Soil erosion and sediment control maintenance must occur every two weeks and after every ½" or greater rainfall event.

- c. The total area of the construction site is estimated to be 26.5 acres.

The total area of the site that it is estimated will be disturbed by excavation, grading or other activities is 26.5 acres.

- d. The estimated runoff coefficients of the various areas of the site after construction activities are completed are contained in the project drainage study which is hereby incorporated by reference in this plan. Information describing the soils at the site is contained either in the Soils Report for the project, which is hereby incorporated by reference, or in an attachment to this plan.

Estimated proposed runoff coefficients:

- Outlet 1 – Outside of this project scope of work (was part of and within Phase I project limits)
- Outlet 2 – to culvert/wetlands; c(avg.) = 0.52
- Outlet 3 – to I-94 toll ditch; c(avg.) = 0.58
- Outlet 4 – to I-94 Toll Ditch, c(avg.) = 0.52
- Outlet 5 – to detention pond outside IDOT ROW; c(avg.) = 0.9
- Outlet 6 – to storm sewer to subway pump station; c(avg.) = 0.62
- Various other project culvert/ditch locations; c(avg.) = 0.51 to 0.58
- Project Average c = 0.53

- e. The design/project report, hydraulic report, or plan documents, hereby incorporated by reference, contain site map(s) indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of major soil disturbance, the location of major structural and nonstructural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands), and locations where storm water is discharged to a surface water.

The proposed maximum roadway ditch slopes vary between 0.5% and 3% except for one small section of roadway south of IL 60 and west of bridge that drains to I-94 Tollway ditch. At this location, permanent soil erosion control measures will be provided. Any slopes equal to or greater than 3:1 shall be seeded with seeding Class 3, with erosion control blanket. Two retaining walls will be constructed on the south side of IL 60. These major structural measures will eliminate soil erosion outside due to steep slopes. Along IL 60 right-of-way all sloped pipe drains and outlets will be provided with riprap stabilized outlet area to eliminate possible erosion.

- f. The names of receiving water(s) and areal extent of wetland acreage at the site are in the design/project report or plan documents which are incorporated by reference as a part of this plan.

The project storm water runoff flows into ditches, swales, culverts, existing wetlands, I-94 tollway ditches and storm sewer, existing detention pond outside of IDOT ROW. Storm sewer runoff eventually flows into an unnamed stream, the DesPlaines River, and the North Branch Chicago River.

Wetland Buffers

1/3 ac < Total Surface Area < 1.0 acres	-	30 feet each side, buffer area
1.0 ac < Total Surface Area < 2.5 acres	-	40 feet each side, buffer area
2.5 ac < Total Surface Area	-	50 feet each side, buffer area

Project area wetlands include:

- # 4 – South of IL 60, west of Riverwoods Rd; 0.17 ac total size – 0.0 ac impacted
- # 7 – South of IL 60, east of Riverwoods Rd; 1.23 ac total size – 0.0243 ac impacted due to grading/retaining wall
- # 19 – South of IL 60, east of I-94 NB exit ramp; 0.20 ac total size – 0.0 ac impacted
- # 20 – South of IL 60, east of I-94 NB exit ramp; 0.26 ac total size – 0.0 ac impacted
- # 13 – South of IL 60, east of I-94 NB exit ramp; 2.67 ac total size – 0.0 ac impacted
- # 18 – South of IL 60, west of Saunders Rd; 0.09 ac total size – 0.0 ac impacted

**2. Controls**

This section of the plan addresses the various controls that will be implemented for each of the major construction activities described in 1.b. above. For each measure discussed, the contractor that will be responsible for its implementation is indicated. Each such contractor has signed the required certification on forms which are attached to, and a part of, this plan:

**a. Erosion and Sediment Controls**

- (i) Stabilization Practices. Provided below is a description of interim and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided in 2.a.(i).(A) and 2.b., stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased on all disturbed portions of the site where construction activity will not occur for a period of 21 or more calendar days.

- (A) where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

Description of Stabilization Practices (use additional pages, as necessary):

- 1.) Temporary Erosion Control Seeding in areas along the grading of IL 60.
- 2.) Temporary Stabilization with Straw Mulch in areas along the grading of the I-94 Ramps.
- 3.) Erosion Control Blanket in ALL areas along IL 60 and I-94 Ramps with permanent seeding.
- 4.) Sod between the roadway and the two retaining walls along the south side of IL 60.
- 5.) Seeding, Class 3 in areas where the slope is 3:1.
- 6.) Seeding, Class 4A in ditched areas along IL 60.

- (ii) **Structural Practices.** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

Description of Structural Practices (use additional pages, as necessary):

- 1.) Silt Fence, Sediment Control along IL 60, I-94 Ramps, and along right-of-way adjacent to existing delineated wetlands to prevent sediment runoff during storms. Silt Fence is to meet minimum AASHTO M288-00 Standards.
- 2.) Inlet Filter to be installed in off project drainage structures accepting project storm water runoff. (Straw bales will not be allowed for inlet filters.)
- 3.) Temporary Ditch Check along ditches and swales dependent on ditch or swale slope. (Straw bales will not be allowed for temporary ditch checks.)
- 4.) Inlet and pipe protection for all storm sewer structures located in disturbed turfed areas. (Straw bales will not be allowed for inlet and pipe protection.)

**b. Storm Water Management**

Provided below is a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

- (i) Such practices may include: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff on site; and sequential systems (which combine several practices). **The practices selected for implementation were determined on the basis of the technical guidance in Section 10-300 (Design Considerations) in Chapter 10 (Erosion and Sedimentation Control) of the Illinois Department of Transportation Drainage Manual. If practices other than those discussed in Section 10-300 are selected for implementation or if practices are applied to situations different from those covered in Section 10-300, the technical basis for such decisions will be explained below.**
- (ii) Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions, such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of Storm Water Management Controls (use additional pages, as necessary):

- 1.) Construction of vegetated ditches and swales adjacent to IL-60 to assist in the removal of offsite and some on site flows. These swales and ditches will direct the runoff to a storm sewer system, existing ditches, culverts, wetlands, and detention ponds which will ultimately discharge to either the Des Plaines River and the North Branch Chicago River. Native vegetation or flower mixture will be used when possible.
- 2.) Storm sewer restrictor manholes will be use at locations with sensitive outlets.
- 3.) Ditches or swales with low maintenance native vegetation upstream of the outfall to the impacted wetland will be incorporated.
- 4.) Riprap will be placed at the outlet upstream from the impacted wetland and where necessary at outlets for erosion protection and sediment control.

**c. Other Controls**

- (i) Waste Disposal. No solid materials, including building materials, shall be discharged into Waters of the State, except as authorized by a Section 404 permit.
- (ii) The provisions of this plan shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.

**d. Approved State or Local Plans**

The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual, 1995. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans or site permits or storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI to be authorized to discharge under permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

Refer to the attached Illinois Department of Transportation plans for proposed highway: FAP Route 335 IL Route 60 (Townline Road) over I-94; Section 119R-2 Bridge Replacement and Intersection Reconstruction" documents sheets 104-108 "Temporary Erosion Control Plan".

**3. Maintenance**

The following is a description of procedures that will be used to maintain, in good and effective operating conditions, vegetation, erosion and sediment control measures and other protective measures identified in this plan (use additional pages, as necessary):

All erosion control devices will be inspected by a Lake County SMC certified Designated Erosion Control Inspector (DECI) every 7 calendar days or within 24 hours after a 0.5 inch rainfall or snow. All sediment deposits shall be removed after each rainfall.

**4. Inspections**

Qualified personnel (Lake County SMC certified Designated Erosion Control Inspector (DECI)) shall inspect disturbed areas of the construction site which have not been finally stabilized, structural control measures, and locations where vehicles enter or exit the site. Such inspections shall be conducted at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater or equivalent snowfall.

- a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off site sediment tracking.
- b. Based on the results of the inspection, the description of potential pollutant sources identified in section 1 above and pollution prevention measures identified in section 2 above shall be revised as appropriate as soon as practicable after such inspection. Any changes to this plan resulting from the required inspections shall be implemented within 7 calendar days following the inspection.
- c. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection (DECI), the date(s) of the inspection, major observations relating to the implementation of this storm water pollution prevention plan, and actions taken in accordance with section 4.b. shall be made and retained as part of the plan for at least three (3) years after the date of the inspection. The report shall be signed in accordance with Part VI. G of the general permit.
- d. If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the DECI, Resident Engineer or Resident Technician shall complete and file an "Incidence of Noncompliance" (ION) report for the identified violation. The DECI, Resident Engineer or Resident Technician shall use forms provided by the Illinois Environmental Protection Agency and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of noncompliance shall be signed by a responsible authority in accordance with Part VI. G of the general permit.

The report of noncompliance shall be mailed to the following address:

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Attn: Compliance Assurance Section  
1021 North Grand East  
Post Office Box 19276  
Springfield, Illinois 62794-9276

**5. Non-Storm Water Discharges**

Except for flows from fire fighting activities, sources of non-storm water that is combined with storm water discharges associated with the industrial activity addressed in this plan must be described below. Appropriate pollution prevention measures, as described below, will be implemented for the non-storm water component(s) of the discharge. (Use additional pages as necessary to describe non-storm water discharges and applicable pollution control measures).

Not Applicable to this project.



**Contractor Certification Statement**

This certification statement is a part of the Storm Water Pollution Prevention Plan for the project described below, in accordance with NPDES Permit No. ILR10, issued by the Illinois Environmental Protection Agency on May 14, 1998.

Project Information:

Route	<u>FAP 335</u>	Marked	<u>IL Route 60</u>
Section	<u>119R-2</u>	Project No.	<u>D-91-046-03</u>
County	<u>Lake</u>	Contract No.	<u>60B01</u>

I certify under penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR 10) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

_____ Signature	_____ Date
_____ Title	
_____ Name of Firm	
_____ Street Address	
_____ City	_____ State
_____ Zip Code	
_____ Telephone Number	

## **METAL RAILING COATING**

Description. This work shall consist of furnishing and applying finish coating on Bridge Fence Railing and Parapet Railing as shown on the plans. All work shall conform to Sections 509 and 1006 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2007 and as specified herein.

### Materials.

- (a) Prior to finish coat, mechanically clean galvanized surfaces to smooth the surface and remove large deposits from the galvanizing process. Do not damage or remove the galvanizing material as to compromise the corrosion resistance of the system. Alternately, provide other approved method(s) to ensure smooth final finished surface.
- (b) Finish all exposed surfaces of the Bridge Fence Railing and Parapet Railing with 2 coats of an electrostatic polyester, TGIC powder coating, colored black (Munsell Number N1), with high UV stability, impact, corrosion, heat and humidity resistance. The combined total thickness of the two finish coats shall be a minimum of 6 mils.
- (c) Finish system shall meet or exceed the following:
  - (1) ASTM B 117 Salt Spray (fog) test – 1,000 hrs. The coated steel shall exhibit no visible evidence of rust.
  - (2) ASTM D 3363 Hardness, ASTM D2793 Direct Impact, ASTM D822 Weatherability.
  - (3) ASTM D 3359B Mechanical adhesion test
- (d) The exposed heads and nuts of all hot-dip galvanized anchor rods shall be spot painted with an approved paint system to match finish color. The surface to be painted shall first be cleaned with an approved solvent.
- (e) Any damage to the coatings shall be repaired promptly in accordance with the manufacturer's recommendations or replaced with undamaged components. Finish all damaged, cut or other surfaces not powder coated, with zinc-rich primer (if not already galvanized) & high performance finish coat, compatible with factory coating system, to match finish color.

Method of Measurement. This work will be measured for payment in place in feet. The length measured will be the overall length along the top longitudinal railing member through all posts and gaps.

Basis of Payment. This work will be paid for at the contract unit price per foot for BRIDGE FENCE RAILING COATING and PARAPET RAILING COATING.

## **ABANDONED WATER MAIN TO BE CUT AND REMOVED**

Description. This special provision specifies cutting and removal of abandoned, grout-filled, 12-inch diameter water main conflicting with the installation of proposed storm sewers and structures as shown on the plans or as directed by the Engineer. This work shall consist of

cutting and removing the minimum length of water main required to allow proper installation of the storm sewers and structures, backfilling the removal area according to applicable portions of Article 550.07 of the Standard Specifications, and disposal of the water main removed.

Method of Measurement. This work will be measured for payment in feet for the actual length of water main removed.

Basis of Payment. This work will be paid for at the contract unit price per foot for ABANDONED WATER MAIN TO BE CUT AND REMOVED.

### **DEMOLITION PLANS FOR REMOVAL OF EXISTING STRUCTURES**

Effective March 26, 2007

Add to the beginning of Article 501.02 of the Standard Specifications.

“For work adjacent to or over an active roadway, railroad or navigable waterway, the Contractor shall submit a demolition plan to the Engineer for approval, detailing the proposed methods of demolition and the amount, location(s) and type(s) of equipment to be used. The demolition plan shall include an assessment of the structure’s condition and an evaluation of the structure’s strength and stability during demolition and shall be sealed by an Illinois Licensed Structural Engineer.”

### **SUSPENSION OF SLIPFORMED PARAPETS**

Effective: January 1, 2007

Slipforming of parapets is not allowed on this contract.

**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

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**ATTACHMENTS**

- A. Employment Preference for Appalachian Contracts  
(included in Appalachian contracts only)

**I. GENERAL**

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

- Section I, paragraph 2;
- Section IV, paragraphs 1, 2, 3, 4 and 7;
- Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

- a. Discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
- b. Employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

**II. NONDISCRIMINATION**

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60 (and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job-training."

2. EEO Officer: The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above

agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employees referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish which such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any

evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to

the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or quailifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

### III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

### IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

#### 1. General:

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the

contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

## 2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or

disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the question, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

## 3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any cost reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

## 4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

### a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not

listed on the wage determination unless the Administrator of the

be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable apprentice determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits

Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which cases such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV. 2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainee's and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall, upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

**V. STATEMENTS AND PAYROLLS**

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan

or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period).

The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V.

This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U/S. C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for

inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

## **VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR**

1. On all federal-aid contracts on the national highway system, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:

- a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.
- b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.
- c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

## **VII. SUBLETTING OR ASSIGNING THE CONTRACT**

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractors' own organization (23 CFR 635).

- a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.
- b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a

whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract.

Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

## **VIII. SAFETY: ACCIDENT PREVENTION**

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S. C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

## **IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification,

distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

**NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS**

18 U.S.C. 1020 reads as follows:

*“Whoever, being an officer, agent or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or*

*Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or*

*Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;*

*Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both.”*

**X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more).

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of

any communication from the Director, Office of Federal Activities, EPA indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

**XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms “covered transaction,” “debarred,” “suspended,” “ineligible,” “lower tier covered transaction,” “participant,” “person,” “primary covered transaction,” “principal,” “proposal,” and “voluntarily excluded,” as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled

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"Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded from Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

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### **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Primary Covered Transactions**

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
- d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

### **2. Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealing.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

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**Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion-Lower Tier Covered Transactions:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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**XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**MINIMUM WAGES FOR FEDERAL AND FEDERALLY  
ASSISTED CONSTRUCTION CONTRACTS**

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.

**NOTICE**

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at <http://www.dot.state.il.us/desenv/delett.html>.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at <http://www.dot.state.il.us/desenv/subsc.html>.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.