

**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.

# 75

RETURN WITH BID

Proposal Submitted By
Name
Address
City

Letting August 5, 2005

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. 83807  
LAKE County  
Section 03-00088-00-FP (Buffalo Grove)  
Route FAU 1257 (Deerfield Parkway)  
Project M-8003(524)  
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
2. Other special documentation and/or information that may be required by the contract special provisions

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

Questions Regarding	Call
Prequalification and/or Authorization to Bid	217/782-3413
Preparation and submittal of bids	217/782-7806
Mailing of CD-ROMS	217/782-7806

RETURN WITH BID



PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

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

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

**Contract No. 83807  
LAKE County  
Section 03-00088-00-FP (Buffalo Grove)  
Project M-8003(524)  
Route FAU 1257 (Deerfield Parkway)  
District 1 Construction Funds**

**Improvement consists of reconstructing Deerfield Parkway east of Illinois Route 83, widening the intersection of Deerfield Parkway and Buffalo Grove Road and the intersection of Deerfield Parkway and Highland Grove concluding west of the intersection of Deerfield Parkway and Weiland Road. Includes earth excavation, pavement removal, bituminous pavement widening, PCC pavement widening, combination curb and gutter, an enclosed drainage system and a new traffic signal at Deerfield Parkway and Buffalo Grove's Fire Station 26 with traffic signal improvements at the intersection of Deerfield Parkway and Buffalo Grove Road in Buffalo Grove.**

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.

STATE JOB # - C-91-266-05  
 PPS NBR - 1-10171-0000

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT NUMBER - 83807

ECMS002 DTGECM03 ECMR003 PAGE 1  
 RUN DATE - 07/08/05  
 RUN TIME - 183331

COUNTY NAME	CODE	DIST	SECTION NUMBER	PROJECT NUMBER	ROUTE
LAKE	097	01	03-00088-00-FP (BUFFALO GROVE)	M-8003/524/000	FAU 1257

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
A2C037G3	T-MALUS CORON CG 3G	EACH	84.000	X	=		
A2004624	T-GLEDIT TRI IN 3	EACH	38.000	X	=		
A2007924	T-TILLIA AMER RD 3	EACH	75.000	X	=		
XX002856	RE-OPTIMIZE TR SIG SY	L SUM	1.000	X	=		
XX002868	TEMP DITCH CHECKS SPL	EACH	20.000	X	=		
XX003660	FOCC62.5/125 MM24SM12	FOOT	10,064.000	X	=		
XX003662	ELCBL C VIDEO #20 3C	FOOT	172.000	X	=		
XX004679	PED SH LED 1F BM CD T	EACH	4.000	X	=		
XX004680	PED SH LED 2F BM CD T	EACH	7.000	X	=		
XX004878	MAINT TEMP ERDS CON S	L SUM	1.000	X	=		
XX004914	TEMP TR SIG SYSTEM	EACH	1.000	X	=		
XX005230	VIDEO DET SY COMP INT	L SUM	2.000	X	=		
XX005231	REMOTE CONTR VIDEO SY	L SUM	2.000	X	=		
XX005659	SED CONT DR ST INL F	EACH	142.000	X	=		
XX005937	LED INT IL STNAME SGN	EACH	8.000	X	=		



FAU 1257  
03-00088-00-FP (BUFFALO GROVE)  
LAKE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF PRICES  
CONTRACT NUMBER - 83807

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RUN DATE - 07/08/05  
RUN TIME - 183331

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
XX006037	CDS UNIT	EACH	2.000				
XX006357	ELCBL C COM 16 5.5 PR	FOOT	1,718.000				
XX006358	VIDEO TRANS SYS SP	EACH	2.000				
XX006359	UD 2#6 #8G XLP USE 2	FOOT	13,100.000				
XX006360	UD 3#6 #8G XLP USE 2	FOOT	750.000				
XX006361	UD 4#6 #8G XLP USE 2	FOOT	300.000				
XX006362	UD 2#6#8G 3#12#12G 2	FOOT	300.000				
XX006363	ELCBL 2/0 BARE CU GND	FOOT	450.000				
XX006364	PHOTOCELL SHORT CAP	EACH	32.000				
XX006365	EX FIXTURE MAINT	EACH	35.000				
XX006366	CB TC T18F&G	EACH	1.000				
XX006367	INLET & OUTLET PROTEC	EACH	46.000				
XX006368	RD CB 4 DIA T12F&G	EACH	1.000				
XX006369	SAWED CONTR JOINT SUP	FOOT	300.000				
XX206400	MAILBOX POST	EACH	4.000				

FAU 1257  
 03-00088-00-FP (BUFFALO GROVE)  
 LAKE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT NUMBER - 83807

ECMS002 DTGECM03 ECRM003 PAGE 3  
 RUN DATE - 07/08/05  
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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
X0301576	COAXIAL CABLE IN CON	FOOT	172.000	=		
X0321478	MAIN EX LT SYS COMP	L SUM	1.000	=		
X0322131	EM VEH PRE P-B ASSY	EACH	1.000	=		
X0322256	TEMP INFO SIGNING	SQ FT	364.000	=		
X0322925	ELCBL C TRACER 14 1C	FOOT	9,922.000	=		
X0324637	BASE COVER LIGHT POLE	EACH	22.000	=		
X0712400	TEMP PAVEMENT	SQ YD	8,545.000	=		
X4021000	TEMP ACCESS- PRIV ENT	EACH	7.000	=		
X4022000	TEMP ACCESS- COM ENT	EACH	1.000	=		
X4066414	BC SC SUPER "C" N50	TON	67.000	=		
X4066614	BCBC SUP IL-19.0 N50	TON	309.000	=		
X4403300	CONC MEDIAN REMOV	SQ FT	6,399.000	=		
X6013600	PIPE UNDERDRAIN 4 MOD	FOOT	15,412.000	=		
X6063401	COMB CC&G TM4.12	FOOT	1,085.000	=		
X6700405	ENGR FLD OFF A MOD	CAL MO	15.000	=		

FAU 1257  
 03-00088-00-FP (BUFFALO GROVE)  
 LAKE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT NUMBER - 83807

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 RUN DATE - 07/08/05  
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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
X7015050	PORT CHANGE MESS SIGN	CAL MO	7.000	=		
X7800100	PT PVT MK- RAISED MED	SQ FT	1,161.000	=		
X8050015	SERV INSTALL POLE MT	EACH	3.000	=		
X8380083	BREAKAWAY DEVICE	EACH	71.000	=		
X8730027	ELCBL C GROUND 6 1C	FOOT	1,553.000	=		
X8730250	ELCBL C 20 3C TW SH	FOOT	652.000	=		
X8800020	SH LED 1F 3S MAM	EACH	14.000	=		
X8800035	SH LED 1F 3S BM	EACH	7.000	=		
X8800040	SH LED 1F 5S BM	EACH	6.000	=		
X8800045	SH LED 1F 5S MAM	EACH	6.000	=		
X8950200	REBUILD EX HANDHOLE	EACH	1.000	=		
Z0001050	AGG SUBGRADE 12	SQ YD	55,204.000	=		
Z0019600	DUST CONTROL WATERING	UNIT	150.000	=		
Z0044700	PRESS CONNECT 8X6	EACH	4.000	=		
Z0045300	PRESS CONNECT 16X6	EACH	1.000	=		

FAU 1257  
 03-00088-00-FP (BUFFALO GROVE)  
 LAKE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
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 RUN DATE - 07/08/05  
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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
Z0076600	TRAINEES	HOUR	1,000.000	0.80	=	800.00	
20100110	TREE REMOV 6-15	UNIT	200.000		=		
20101100	TREE TRUNK PROTECTION	EACH	111.000		=		
20101200	TREE ROOT PRUNING	EACH	111.000		=		
20101300	TREE PRUN 1-10	EACH	111.000		=		
20101700	SUPPLE WATERING	UNIT	60.000		=		
20200410	EARTH EXCAVATION SPL	CU YD	21,718.000		=		
20201200	REM & DISP UNS MATL	CU YD	3,322.000		=		
20400800	FURNISHED EXCAV	CU YD	6,746.000		=		
20700300	POROUS GRAN EMB SPEC	TON	7,602.000		=		
20800150	TRENCH BACKFILL	CU YD	1,290.000		=		
21001000	GEOTECH FAB F/GR STAB	SQ YD	55,256.000		=		
21101615	TOPSOIL F & P 4	SQ YD	26,589.000		=		
21101645	TOPSOIL F & P 12	SQ YD	2,794.000		=		
21300010	EXPLOR TRENCH SPL	FOOT	50.000		=		

FAU 1257  
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 LAKE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
25000400	NITROGEN FERT NUTR	POUND	550.000	=			
25000500	PHOSPHORUS FERT NUTR	POUND	550.000	X			
25000600	POTASSIUM FERT NUTR	POUND	550.000	X			
25200110	SODDING SALT TOLERANT	SQ YD	29,383.000	X			
28000250	TEMP EROS CONTR SEED	POUND	607.000	X			
28000400	PERIMETER EROS BAR	FOOT	583.000	X			
31101200	SUB GRAN MAT B 4	SQ YD	380.000	X			
40600100	BIT MATLS PR CT	GALLON	30.000	X			
42000501	PCC PVT 10 JOINTED	SQ YD	43,534.000	X			
42001300	PROTECTIVE COAT	SQ YD	52,135.000	X			
42300200	PCC DRIVEWAY PAVT 6	SQ YD	261.000	X			
42300400	PCC DRIVEWAY PAVT 8	SQ YD	122.000	X			
42400200	PC CONC SIDEWALK 5	SQ FT	6,478.000	X			
42400800	DETECTABLE WARNINGS	SQ FT	1,900.000	X			
44000007	BIT SURF REM 2	SQ YD	2,146.000	X			

FAU 1257  
03-00088-00-FP (BUFFALO GROVE)  
LAKE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF PRICES  
CONTRACT NUMBER - 83807

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RUN DATE - 07/08/05  
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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
44000100	PAVEMENT REM	SQ YD	31,955.000	=			
44000200	DRIVE PAVEMENT REM	SQ YD	745.000	=			
44000500	COMB CURB GUTTER REM	FOOT	4,691.000	=			
44000600	SIDEWALK REM	SQ FT	8,258.000	=			
44300100	AREA REF CR CON TREAT	SQ YD	2,390.000	=			
48100500	AGGREGATE SHLDS A 6	SQ YD	160.000	=			
48202400	BIT SHLD SUPER 6	SQ YD	160.000	=			
54213675	PRC FLAR END SEC 30	EACH	1.000	=			
54214731	PRCF END S EL EQRS 36	EACH	1.000	=			
54247150	GRATING-C FL END S 30	EACH	1.000	=			
54248160	GRT-C FL END S EQV 36	EACH	1.000	=			
550A0040	STORM SEW CL A 1 10	FOOT	14.000	=			
550A0050	STORM SEW CL A 1 12	FOOT	1,937.000	=			
550A0070	STORM SEW CL A 1 15	FOOT	220.000	=			
550A0090	STORM SEW CL A 1 18	FOOT	213.000	=			

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
550A0120	STORM SEW CL A 1 24	FOOT	326.000	=		
550A0140	STORM SEW CL A 1 30	FOOT	614.000	=		
550A0340	STORM SEW CL A 2 12	FOOT	1,111.000	=		
550A0360	STORM SEW CL A 2 15	FOOT	308.000	=		
550A0380	STORM SEW CL A 2 18	FOOT	159.000	=		
550A0410	STORM SEW CL A 2 24	FOOT	858.000	=		
550A0430	STORM SEW CL A 2 30	FOOT	870.000	=		
550B0020	STORM SEW CL B 1 6	FOOT	23.000	=		
55034500	SS 1 RCEP S38 R24	FOOT	185.000	=		
55034600	SS 1 RCEP S45 R29	FOOT	378.000	=		
55100200	STORM SEWER REM 6	FOOT	14.000	=		
55100400	STORM SEWER REM 10	FOOT	127.000	=		
55100500	STORM SEWER REM 12	FOOT	981.000	=		
55100700	STORM SEWER REM 15	FOOT	20.000	=		
55100900	STORM SEWER REM 18	FOOT	241.000	=		

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				DOLLARS	CENTS	DOLLARS	CTS
55101100	STORM SEWER REM 21	FOOT	6.000				
55101200	STORM SEWER REM 24	FOOT	118.000				
55101300	STORM SEWER REM 27	FOOT	63.000				
55101400	STORM SEWER REM 30	FOOT	1,011.000				
56107200	REM RELOC WAT MAIN 8	FOOT	80.000				
56107500	REM RELOC WAT MAIN 16	FOOT	20.000				
56400100	FIRE HYDNITS TO BE MVD	EACH	5.000				
60201340	CB TA 4 DIA T24F&G	EACH	13.000				
60207605	CB TC T8G	EACH	17.000				
60208105	CB TC T12F&G	EACH	3.000				
60208240	CB TC T24F&G	EACH	59.000				
60214714	RD CB 4 DIA T24F&G	EACH	43.000				
60216614	RD CB 5 DIA T24F&G	EACH	2.000				
60218400	MAN TA 4 DIA T1F CL	EACH	2.000				
60221100	MAN TA 5 DIA T1F CL	EACH	5.000				



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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
60223800	MAN TA 6 DIA T1F CL	EACH	3.000				
60224600	RD MAN 4 DIA T1F CL	EACH	9.000				
60225100	RD MAN 4 DIA T8G	EACH	4.000				
60225400	RD MAN 5 DIA T1F CL	EACH	25.000				
60225900	RD MAN 5 DIA T8G	EACH	3.000				
60247800	JUNCTION CHAMBER	EACH	1.000				
60250200	CB ADJUST	EACH	2.000				
60252800	CB RECONST	EACH	1.000				
60255500	MAN ADJUST	EACH	4.000				
60257900	MAN RECONST	EACH	4.000				
60265700	VV ADJUST	EACH	9.000				
60266100	VV RECONST	EACH	4.000				
60402210	GRATES T8	EACH	1.000				
60500040	REMOV MANHOLES	EACH	8.000				
60500050	REMOV CATCH BAS	EACH	17.000				

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
60500060	REMOV INLETS	EACH	23.000				
60603800	COMB CC&G TB6.12	FOOT	5,281.000				
60605000	COMB CC&G TB6.24	FOOT	14,428.000				
60619600	CONC MED TSB6.12	SQ FT	12,438.000				
60622000	CONC MED TSM2.12	SQ FT	870.000				
60624600	CORRUGATED MED	SQ FT	790.000				
61140200	STORM SEWER SPEC 12	FOOT	201.000				
61140400	STORM SEWER SPEC 15	FOOT	169.000				
61140600	STORM SEWER SPEC 18	FOOT	332.000				
61140900	STORM SEWER SPEC 24	FOOT	189.000				
61141100	STORM SEWER SPEC 30	FOOT	17.000				
67100100	MOBILIZATION	L SUM	1.000				
70101700	TRAF CONT & PROT	L SUM	1.000				
70300510	PAVT MARK TAPE T3 L&S	SQ FT	219.000				
70300520	PAVT MARK TAPE T3 4	FOOT	37,291.000				

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
70300540	PAVT MARK TAPE T3 6	FOOT	900.000	=		
70300560	PAVT MARK TAPE T3 12	FOOT	796.000	=		
70300570	PAVT MARK TAPE T3 24	FOOT	181.000	=		
70300610	TEMP PT PAVT MK L&S	SQ FT	219.000	=		
70300725	TEMP PT PAVT MK 4 WH	FOOT	9,581.000	=		
70300735	TEMP PT PAVT MK 6 WH	FOOT	660.000	=		
70300825	TEMP PT PVT MK 4 YEL	FOOT	16,220.000	=		
70300845	TEMP PT PVT MK 12 YEL	FOOT	644.000	=		
70301000	WORK ZONE PAVT MK REM	SQ FT	11,085.000	=		
72000100	SIGN PANEL T1	SQ FT	118.000	=		
72400100	REMOV SIN PAN ASSY TA	EACH	11.000	=		
72400500	RELOC SIN PAN ASSY TA	EACH	36.000	=		
72800100	TELES STL SIN SUPPORT	FOOT	144.000	=		
72900110	METAL POST TY A	EACH	1.000	=		
72900210	METAL POST TY B	EACH	12.000	=		



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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
81000800	CON T 3 GALVS	FOOT	26.000	=		
81001000	CON T 4 GALVS	FOOT	790.000	=		
81001100	CON T 5 GALVS	FOOT	20.000	=		
81018500	CON P 2 GALVS	FOOT	714.000	=		
81018600	CON P 2 1/2 GALVS	FOOT	93.000	=		
81018700	CON P 3 GALVS	FOOT	27.000	=		
81018900	CON P 4 GALVS	FOOT	1,021.000	=		
81019000	CON P 5 GALVS	FOOT	94.000	=		
81400100	HANDHOLE	EACH	18.000	=		
81400300	DBL HANDHOLE	EACH	4.000	=		
81500200	TR & BKFIL F ELECT WIK	FOOT	20,492.000	=		
81702110	EC C XLP USE 1C 10	FOOT	3,436.000	=		
81702150	EC C XLP USE 1C 2	FOOT	300.000	=		
82102250	LUM SV HOR MT 250W	EACH	42.000	=		
82103400	LUM SV HOR MT PC 400W	EACH	8.000	=		

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
82500505	LIGHT CONTROLLER SPL	EACH	4.000				
83029200	LT P S 35MH 6MA	EACH	42.000				
83600200	LIGHT POLE FDN 24D	FOOT	548.000				
84200500	REM EX LT UNIT SALV	EACH	1.000				
84200700	LIGHTING FDN REMOV	EACH	26.000				
84400105	RELOC EX LT UNIT	EACH	29.000				
85000200	MAIN EX TR SIG INSTAL	EACH	3.000				
85700205	FAC T4 CAB SPL	EACH	3.000				
86400100	TRANSCIEVER - FIB OPT	EACH	3.000				
87301215	ELCBL C SIGNAL 14 2C	FOOT	3,391.000				
87301225	ELCBL C SIGNAL 14 3C	FOOT	1,194.000				
87301245	ELCBL C SIGNAL 14 5C	FOOT	5,754.000				
87301255	ELCBL C SIGNAL 14 7C	FOOT	2,975.000				
87301805	ELCBL C SERV 6 2C	FOOT	153.000				
87502480	TS POST GALVS 14	EACH	5.000				

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
87502500	TS POST GALVS 16	EACH	5.000	X	=	
87700190	S MAA & P 30	EACH	2.000	X	=	
87702880	STL COMB MAA&P 30	EACH	2.000	X	=	
87702890	STL COMB MAA&P 32	EACH	1.000	X	=	
87702910	STL COMB MAA&P 36	EACH	1.000	X	=	
87702920	STL COMB MAA&P 38	EACH	1.000	X	=	
87702930	STL COMB MAA&P 40	EACH	3.000	X	=	
87800100	CONC FDN TY A	FOOT	40.000	X	=	
87800200	CONC FDN TY D	FOOT	20.000	X	=	
87800400	CONC FDN TY E 30D	FOOT	105.000	X	=	
87800415	CONC FDN TY E 36D	FOOT	45.000	X	=	
87900200	DRILL EX HANDHOLE	EACH	3.000	X	=	
88200210	TS BACKPLATE LOU ALUM	EACH	20.000	X	=	
88700200	LIGHT DETECTOR	EACH	5.000	X	=	
88700300	LIGHT DETECTOR AMP	EACH	3.000	X	=	

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
88800100	PED PUSH-BUTTON	EACH	18.000				
89000100	TEMP TR SIG INSTALL	EACH	1.000				
89502200	MOD EX CONTR	EACH	3.000				
89502375	REMOV EX TS EQUIP	EACH	1.000				
89502380	REMOV EX HANDHOLE	EACH	13.000				
89502385	REMOV EX CONC FDN	EACH	9.000				
				TOTAL \$			

NOTE:

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.

## 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.

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

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(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. \_\_\_\_\_

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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 \_\_\_

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(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 \_\_\_

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

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

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(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 \_\_\_

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

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

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(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. 83807  
LAKE County  
Section 03-00088-00-FP (Buffalo Grove)  
Project M-8003(524)  
Route FAU 1257 (Deerfield Parkway)  
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. 83807  
LAKE County  
Section 03-00088-00-FP (Buffalo Grove)  
Project M-8003(524)  
Route FAU 1257 (Deerfield Parkway)  
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 \_\_\_\_\_  
\_\_\_\_\_

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

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(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 \_\_\_\_\_

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(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. 83807  
LAKE County  
Section 03-00088-00-FP (Buffalo Grove)  
Project M-8003(524)  
Route FAU 1257 (Deerfield Parkway)  
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., August 5, 2005. 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. 83807  
LAKE County  
Section 03-00088-00-FP (Buffalo Grove)  
Project M-8003(524)  
Route FAU 1257 (Deerfield Parkway)  
District 1 Construction Funds**

**Improvement consists of reconstructing Deerfield Parkway east of Illinois Route 83, widening the intersection of Deerfield Parkway and Buffalo Grove Road and the intersection of Deerfield Parkway and Highland Grove concluding west of the intersection of Deerfield Parkway and Weiland Road. Includes earth excavation, pavement removal, bituminous pavement widening, PCC pavement widening, combination curb and gutter, an enclosed drainage system and a new traffic signal at Deerfield Parkway and Buffalo Grove's Fire Station 26 with traffic signal improvements at the intersection of Deerfield Parkway and Buffalo Grove Road in Buffalo Grove.**

- 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

Timothy W. Martin, Secretary

BD 351 (Rev. 01/2003)

INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS  
Adopted March 1, 2005

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 1-1-02) (Revised 3-1-05)

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BDE SPECIAL PROVISIONS  
For The August 5, 2005 Letting

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

File Name	Pg.#		Special Provision Title	Effective	Revised
80099			Accessible Pedestrian Signals (APS)	April 1, 2003	
80141			Additional Award Criteria	June 1, 2004	
80108			Asbestos Bearing Pad Removal	Nov. 1, 2003	
72541			Asbestos Waterproofing Membrane and Asbestos Bituminous Concrete Surface Removal	June 1, 1989	June 30, 1994
80128			Authority of Railroad Engineer	July 1, 2004	
* 80065			Bituminous Base Course/Widening Superpave	April 1, 2002	Aug. 1, 2005
80050	123	X	Bituminous Concrete Surface Course	April 1, 2001	April 1, 2003
80142	124	X	Bituminous Equipment, Spreading and Finishing Machine	Jan. 1, 2005	
80066			Bridge Deck Construction	April 1, 2002	April 1, 2004
50261			Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	Aug. 1, 2001
50481			Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	Aug. 1, 2001
50491			Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	Aug. 1, 2001
50531			Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	Aug. 1, 2001
80118			Butt Joints	April 1, 2004	April 1, 2005
80031			Calcium Chloride Accelerator for Portland Cement Concrete Patching	Jan. 1, 2001	
80077			Chair Supports	Nov. 1, 2002	Nov. 2, 2002
80051	125	X	Coarse Aggregate for Trench Backfill, Backfill and Bedding	April 1, 2001	Nov. 1, 2003
80094	132	X	Concrete Admixtures	Jan. 1, 2003	July 1, 2004
80112			Concrete Barrier	Jan. 1, 2004	April 2, 2004
80102			Corrugated Metal Pipe Culverts	Aug. 1, 2003	July 1, 2004
80114	137	X	Curing and Protection of Concrete Construction	Jan. 1, 2004	
* 80146	145	X	Detectable Warnings	Aug. 1, 2005	
80029	147	X	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	June 1, 2004
80144			Elastomeric Bearings	April 1, 2005	
31578			Epoxy Coating on Reinforcement	April 1, 1997	Jan. 1, 2003
80041			Epoxy Pavement Marking	Jan. 1, 2001	Aug. 1, 2003
80055	155	X	Erosion and Sediment Control Deficiency Deduction	Aug. 1, 2001	Nov. 1, 2001
80103	156	X	Expansion Joints	Aug. 1, 2003	
* 80101	157	X	Flagger Vests	April 1, 2003	Aug. 1, 2005
80079	158	X	Freeze-Thaw Rating	Nov. 1, 2002	
80072	159	X	Furnished Excavation	Aug. 1, 2002	Nov. 1, 2004
80054	160	X	Hand Vibrator	Nov. 1, 2003	
* 80147			Illuminated Sign	Aug. 1, 2005	
80109			Impact Attenuators	Nov. 1, 2003	
80110			Impact Attenuators, Temporary	Nov. 1, 2003	April 1, 2004
80104			Inlet Filters	Aug. 1, 2003	
80080			Insertion Lining of Pipe Culverts	Nov. 1, 2002	Aug. 1, 2003
80067			Light Emitting Diode (LED) Signal Head	April 1, 2002	Aug. 1, 2003
80081			Lime Gradation Requirements	Nov. 1, 2002	
80133			Lime Stabilized Soil Mixture	Nov. 1, 2004	April 1, 2005
80045			Material Transfer Device	June 15, 1999	March 1, 2001
80137			Minimum Lane Width with Lane Closure	Jan. 1, 2005	
80138			Mulching Seeded Areas	Jan. 1, 2005	
80082			Multilane Pavement Patching	Nov. 1, 2002	
80129			Notched Wedge Longitudinal Joint	July 1, 2004	
80069			Organic Zinc-Rich Paint System	Nov. 1, 2001	Aug. 1, 2003
80116	161	X	Partial Payments	Sept. 1, 2003	
80013			Pavement and Shoulder Resurfacing	Feb. 1, 2000	July 1, 2004
53600			Pavement Thickness Determination for Payment	April 1, 1999	Jan. 1, 2004

<u>File Name</u>	<u>Pg.#</u>		<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80022	162	X	Payment to Subcontractors	June 1, 2000	Sept. 1, 2003
80130	163	X	Personal Protective Equipment	July 1, 2004	
80134			Plastic Blockouts for Guardrail	Nov. 1, 2004	
80073			Polymer Modified Emulsified Asphalt	Nov. 1, 2002	
80119			Polyurea Pavement Marking	April 1, 2004	
80124	164	X	Portable Changeable Message Signs	Nov. 1, 1993	April 2, 2004
80139	165	X	Portland Cement	Jan. 1, 2005	
80083	166	X	Portland Cement Concrete	Nov. 1, 2002	
80036			Portland Cement Concrete Patching	Jan. 1, 2001	Jan. 1, 2004
419	167	X	Precast Concrete Products	July 1, 1999	Nov. 1, 2004
80120			Precast, Prestressed Concrete Members	April 1, 2004	
80084	168	X	Preformed Recycled Rubber Joint Filler	Nov. 1, 2002	
80015			Public Convenience and Safety	Jan. 1, 2000	
80121			PVC Pipeliner	April 1, 2004	April 1, 2005
80122			Railroad, Full-Actuated Controller	April 1, 2004	
34261			Railroad Protective Liability Insurance	Dec. 1, 1986	May 1, 1988
80105			Raised Reflective Pavement Markers (Bridge)	Aug. 1, 2003	
80011	169	X	RAP for Use in Bituminous Concrete Mixtures	Jan. 1, 2000	April 1, 2002
80032			Remove and Re-Erect Steel Plate Beam Guardrail and Traffic Barrier Terminals	Jan. 1, 2001	Jan. 1, 2005
80085			Sealing Abandoned Water Wells	Nov. 1, 2002	
* 80131	173	X	Seeding and Sodding	July 1, 2004	Aug. 1, 2005
80132	176	X	Self-Consolidating Concrete for Precast Products	July 1, 2004	
80096			Shoulder Rumble Strips	Jan. 1, 2003	
80140			Shoulder Stabilization at Guardrail	Jan. 1, 2005	
80135			Soil Modification	Nov. 1, 2004	April 1, 2005
* 80070	178	X	Stabilized Subbase and Bituminous Shoulders Superpave	April 1, 2002	Aug. 1, 2005
80127	184	X	Steel Cost Adjustment	April 2, 2004	July 1, 2004
* 80143	188	X	Subcontractor Mobilization Payments	April 2, 2005	
80086	189	X	Subgrade Preparation	Nov. 1, 2002	
80136			Superpave Bituminous Concrete Mixture IL-4.75	Nov. 1, 2004	
80010	190	X	Superpave Bituminous Concrete Mixtures	Jan. 1, 2000	April 1, 2004
80039			Superpave Bituminous Concrete Mixtures (Low ESAL)	Jan. 1, 2001	April 1, 2004
* 80075			Surface Testing of Pavements	April 1, 2002	Aug. 1, 2005
80145			Suspension of Slipformed Parapets	June 11, 2004	
80092			Temporary Concrete Barrier	Oct. 1, 2002	Nov. 1, 2003
80087	197	X	Temporary Erosion Control	Nov. 1, 2002	
80008			Temporary Module Glare Screen System	Jan. 1, 2000	
80106			Temporary Portable Bridge Traffic Signals	Aug. 1, 2003	
80098			Traffic Barrier Terminals	Jan. 1, 2003	
57291	199	X	Traffic Control Deficiency Deduction	April 1, 1992	Jan. 1, 2005
20338	200	X	Training Special Provisions	Oct. 15, 1975	
80107			Transient Voltage Surge Suppression	Aug. 1, 2003	
80123	203	X	Truck Bed Release Agent	April 1, 2004	
* 80149	204	X	Variable Spaced Tining	Aug. 1, 2005	
80048	205	X	Weight Control Deficiency Deduction	April 1, 2001	Aug. 1, 2002
80090			Work Zone Public Information Signs	Sept. 1, 2002	Jan. 1, 2005
80125	207	X	Work Zone Speed Limit Signs	April 2, 2004	April 15, 2004
80126	208	X	Work Zone Traffic Control	April 2, 2004	Jan. 2, 2005
80097	210	X	Work Zone Traffic Control Devices	Jan. 1, 2003	Nov. 1, 2004
80071	212	X	Working Days	Jan. 1, 2002	

The following special provisions have been **deleted** from use:

80113 Curb Ramps for Sidewalk This special provision has been replaced by the BDE Special Provision, "Detectable Warnings".

43761 Driving Guardrail Posts This special provision has been made obsolete by revising Standard 630201 and issuing the BDE Special Provision, "Shoulder Stabilization at Guardrail".

80091 Underdrain Operations This special provision is no longer required and has been deleted.

The following special provisions are in the 2005 Supplemental Specifications and Recurring Special Provisions:

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
80052	Adjusting Frames and Grates	Sections 602, 603, and 1043	Aug. 1, 2001	Nov. 1, 2001
80093	Articulated Block Revetment Mat	Sections 285 and 1005	Jan. 1, 2003	
80078	Controlled Aggregate Mixing System	Sections 311, 351, and 481	Nov. 1, 2002	
80100	Epoxy Coatings for Steel Reinforcement	Section 1006	April 1, 2003	
80095	Precast Block Revetment Mat	Sections 285 and 1005	Jan. 1, 2003	
80074	Shoulder Inlets with Curb	Section 610	Aug. 1, 2002	
80117	Stone for Erosion Protection, Sediment Control, and Rockfill	Sections 281 and 1005	Jan. 1, 2004	
80088	Traffic Structures	Sections 1069 and 1077	Nov. 1, 2002	

The following special provisions require additional information from the designer. The additional information needs to be included in a separate document attached to this check sheet. The Project Development and Implementation section will then include the information in the applicable special provision. The Special Provisions are:

- Building Removal-Case I
- Building Removal-Case II
- Building Removal-Case III
- Building Removal-Case IV
- DBE Participation
- Material Transfer Device
- Railroad Protective Liability Insurance
- Training Special Provisions
- Working Days

Deerfield Parkway STP Improvement  
Section No. 03-00088-00-FP  
Job No.: C-91-266-05  
Project No. M-8003(524)  
Contract No.: 83807

## **SPECIAL PROVISIONS**

## STATE OF ILLINOIS SPECIAL PROVISIONS

The following Special Provisions supplement the specifications listed in the table below, which apply to and govern the proposed improvement designated as Lake County Section Number 89-00049-00RP and in case of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and govern.

SPECIFICATION	ADOPTED/DATED
<b>Standard Specifications for Road and Bridge Construction</b>	January 1, 2002
<b>Manual on Uniform Traffic Control Devices for Streets and Highways</b> Illinois Supplement	2000 Edition December 2000
<b>Supplemental Specifications , Recurring Special Provisions, and BDE Special Provisions (indicated on the sheets included herein)</b>	Latest Edition
<b>Standard Specifications for Water &amp; Sewer Main Construction In Illinois</b>	May 1996, Fifth Edition

### DEFINITIONS

Throughout these Special Provisions the following definitions shall apply:

"Village" - Village of Buffalo Grove

"Lake County" - Lake County Division of Transportation

"Department" - Illinois Department of Transportation

"Engineer" - Resident Engineer

### LOCATION OF IMPROVEMENT

The Deerfield Parkway STP Improvement is located in Buffalo Grove, Lake County, Illinois. The improvements along Deerfield Parkway extend from 525.80 feet east of IL Route 83, eastward along the alignment, to 460.50 feet west of Weiland Road for a total length of 5,824.20 feet. The improvements along Buffalo Grove Road extend from 1,076.00 feet south of Deerfield

Parkway to 1,104.00 feet north of Deerfield Parkway for a total length of 2,180.00 feet. The improvements along Highland Grove Drive extend from 352.00 feet south of Deerfield Parkway to 345.00 feet north of Deerfield Parkway for a total length of 697.00 feet. The total project length is 8,701.20 feet or 1.65 miles.

### **DESCRIPTION OF IMPROVEMENT**

Improvements shall consist of reconstructing Deerfield Parkway east of IL Route 83, widening the intersection of Deerfield Parkway and Buffalo Grove Road, and the intersection of Deerfield Parkway and Highland Grove Drive concluding west of the intersection of Deerfield Parkway and Weiland Road. The work includes earth excavation, pavement removal, bituminous pavement widening, portland cement concrete pavement widening, combination concrete curb and gutter, an enclosed drainage system, as well as pavement marking, signing, landscape restoration, and all incidental and collateral work necessary to complete the project as shown on the plans and as described within the project specifications. A new traffic signal will be installed at the Deerfield Parkway and Highland Grove Drive intersection, and at the intersection of Deerfield Parkway and Buffalo Grove's Fire Station 26 with traffic signal improvements at the intersection of Deerfield Parkway and Buffalo Grove Road. The traffic signals will be interconnected.

### **GENERAL CONDITIONS**

The Contractor's attention is directed to the following:

1. Should the Contractor desire to obtain water for construction purposes from the local area, the Contractor will be responsible for making arrangements through the Buffalo Grove Public Works Department. Buffalo Grove Public Works will instruct the Contractor where a potable water supply from a hydrant near the work site is located. The Village shall meter the potable water used by the Contractor and the Contractor will be charged for the water used at the Village rates. The Contractor is responsible for the transportation of the water to the site where needed. The cost of transporting the water shall be considered incidental to the contract. All aspects of the use of the water by the Contractor are considered incidental to the contract.
2. Working Hours / Working Days - Construction activities may occur between 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:30 a.m. to 5:00 p.m. on Saturdays. Construction activities on Sundays are prohibited. No work will be performed on holidays observed in Illinois. Construction activities are defined as the operation of heavy equipment, to include

but not limited to all construction trucks and equipment. This is to include the warming up of any piece of equipment or turning on the engines. Construction activities shall not begin before 7:00 a.m.

3. Inspection and Layout - The Contractor shall be responsible for having the finished work conform to the lines, grades, elevations, and dimensions called for in the plans. The Contractor shall be held responsible for the quality and completeness of his work. The Engineer is the Village's representative to verify quality and completeness. Any construction layout necessary shall be coordinated through the Resident Engineer. The Contractor shall exercise care in the preservation of stakes and bench marks and shall have them reset at his/her expense when any are damaged, lost, displaced, or removed or otherwise obliterated.
4. Temporary Toilet - The Contractor shall provide a temporary toilet facility for the use of all contractors' personnel employed on the work, and shall maintain same in proper sanitary condition. At completion, the facility shall be removed and the premises left clean. The Engineer shall approve the location of the temporary toilet. The cost of this facility is considered incidental to the contract.
5. Disposal of Waste Excavated Material - The Contractor shall remove from the project site all unsuitable excavated material. This material will be classified as all material that the Engineer deems unsuitable, such as rebar, abandoned wire, etc. The waste excavated material shall not be deposited on public or private property unless the Contractor first obtains the written permission from the property owner or the authorized representative of the appropriate public agency. The removal of unsuitable material from the site will be incidental to this contract and no compensation will be paid.

The cost of complying with the above General Conditions shall be considered incidental to the contract unless specifically covered elsewhere in the Special Provisions.

### **CONSTRUCTION SAFETY AND HEALTH STANDARDS**

It is a condition of this contract and shall be made a condition of each subcontract entered into pursuant to this contract that the Contractor and any Subcontractor shall not require any laborer or mechanic employed in performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to their health or safety, as determined under Federal Construction Safety and Health Standards.



### **KEEPING ROADS OPEN TO TRAFFIC**

All roads shall remain open to traffic. The Contractor may close one lane because of construction only between the hours of 9:00 AM and 3:00 PM. The Contractor shall maintain one-way traffic during these restricted hours with the use of signs and flagmen as shown on the Traffic Control Standards. Two lanes of traffic will be maintained between 3:00 PM and 9:00 AM and when no construction activities are being carried out. The restricted lane closure time provision may be waived at the Resident Engineer's discretion.

When necessary to close one lane because of construction, the Contractor shall maintain one-way traffic during construction hours with the use of signs and flagmen as shown on the Traffic Control Standards. Two lanes of traffic will be maintained during nights and weekends when no construction activities are being carried on.

### **CONTROL OF WORK & PROSECUTION AND PROGRESS**

It is the intent of the Village that this project be constructed in an orderly and timely manner. Toward this end, the Contractor shall take special note of the provisions of Article 105.06, Article 108.01 paragraph 2, and Article 108.02 of the Standard Specifications which shall be adhered to.

The Contractor shall coordinate all work between their forces and subcontractors to enable completion within the allotted working days.

### **PAVEMENT MARKING PAINT**

In addition to the requirements of Article 105.09 of the Standard Specifications, the Contractor shall furnish, at their expense, white, pink or purple pavement marking paint in aerosol cans, for use by the Engineer. The quality of the marking paint shall be as manufactured by Aervoe-Pacific Co. (distributed by Municipal Marking Distributors, Inc., Dundee, IL) or approved equal. The Contractor and subcontractors shall only use these same colors for their own markings, therefore, not using J.U.L.I.E. utility colors.

### **FINAL SIGN PLACEMENT ON CONSTRUCTION PROJECTS**

All signs removed shall be reinstalled 16 to 18 feet off the edge of pavement where possible. In curb sections this will vary and will be determined by the jurisdictional agency (Lake County,

Village, or IDOT) or as directed by the Engineer.

All single sign installations shall be installed with the bottom of the sign 5 feet above edge of pavement in rural districts, and 7 feet above the edge of pavement in business, commercial or residential districts. On installations having two or more signs, the bottom of the lowest sign shall be 4 feet above edge of pavement.

All signs replaced will be erected using new "Telespar" system metal bases cut 42 inches long from 2 1/4 inch square material. They are to be driven into solid ground using pneumatic driver. This work will not be paid for separately but shall be considered incidental to the contract.

### **EXISTING UTILITIES**

The Contractor shall be aware of the location of all utilities and structures in the project area. The Contractor shall conduct construction operations to avoid damage to the above-mentioned utilities or structures.

Should any damage to utilities occur due to the Contractor's negligence, the Contractor shall be responsible for making all repairs in a manner acceptable to the Engineer. All costs associated with making the repairs shall be the responsibility of the Contractor.

The Contractor shall be aware of the locations of vehicle detector loops cut into the pavement. Any vehicle detector loop damaged by the Contractor's negligence shall be repaired by the Contractor in a manner acceptable to the Engineer. All costs associated with making the repairs shall be the responsibility of the Contractor.

The Contractor shall notify all utility owners of the proposed construction schedule, and shall coordinate construction operations with the utility owners so that relocation of utility lines and structures may proceed in an orderly manner. Notification shall be in writing with copies transmitted to the Engineer.

### **POINTS OF CONTACT**

LAKE COUNTY DIV. OF TRANS.  
MR. CHUCK GLEASON  
SENIOR CIVIL ENGINEER  
600 W. WINCHESTER ROAD  
LIBERTYVILLE, IL 60048-1381

VILLAGE OF BUFFALO GROVE  
MR. RICHARD KUENKLER  
VILLAGE ENGINEER  
51 RAUPP BOULEVARD  
BUFFALO GROVE, ILLINOIS 60089

PH: (847) 362 - 3950  
FAX: (847) 362 - 5290

LAKE COUNTY PUBLIC WORKS

MR. PETER KOLB, P.E.  
CHIEF ENGINEER  
650 WINCHESTER RD.  
LIBERTYVILLE, IL 60048  
PH: (847) 680-1600  
FAX: (847) 680-1609

SBC

MR. J.C. MAYFIELD  
OSPE DESIGN ENGINEERING  
1200 N. ARLINGTON HEIGHTS RD  
ARLINGTON HEIGHTS, IL 60004  
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FAX: (847) 506 - 8738

NORTH SHORE GAS COMPANY

MR. SALVADOR ARANA  
ENGINEERING DEPARTMENT  
3001 GRAND AVENUE  
WAUKEGAN, IL 60085  
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FAX: (847) 263 - 3226

NICOR GAS COMPANY

MR. SCOTT STOGSDILL  
UTILITY CONSULTANT  
1844 FERRY ROAD  
NAPERVILLE, IL 60563  
PH: (630) 983 - 8676 (EXT. 2362)

PH: (847) 459 - 2523  
FAX: (847) 537 - 5845

VILLAGE OF BUFFALO GROVE  
PUBLIC WORKS

MR. GREG BOYSEN  
DIRECTOR OF PUBLIC WORKS  
51 RAUPP BOULEVARD  
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COMMONWEALTH EDISON COMPANY

MR. GEORGE GOGIS, P.E.  
ENGINEERING AND DESIGN - NORTH  
NORTH REGION HEADQUATERS  
1500 FRANKLIN BLVD., 2ND FLOOR  
LIBERTYVILLE, IL 60048  
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FAX: (847) 816 - 5348

COMCAST

MR. THOMAS MUNAR  
RIGHT-OF-WAY ENGINEER  
688 INDUSTRIAL DRIVE  
ELMHURST, IL 60126  
PH: (630) 600 - 6316  
FAX: (630) 600 - 6390

### **PROTECTION OF EXISTING DRAINAGE FACILITIES DURING CONSTRUCTION**

All existing drainage structures are to be kept free of debris resulting from construction operations. All work and material necessary to prevent accumulation of debris in the drainage structures will be considered as incidental to the contract. Any debris in the drainage structures resulting from construction operations shall be removed at the Contractor's own expense, and no extra compensation will be allowed. Should reconstruction or adjustment of a drainage structure be required by the Engineer in the field, the necessary work and payment shall be done in accordance with Section 602 and Article 104.02 respectively of the "Standard Specifications".

During construction, if the Contractor's forces encounter or otherwise become aware of any sewers, underdrains or field drains within the right-of-way other than those shown on the plans, they shall inform the Engineer. The Engineer shall direct the work necessary to maintain or replace the facilities in service, and to protect them from damage during construction if maintained. Existing facilities to be maintained that are damaged because of non-compliance with this provision shall be replaced at the Contractor's own expense. Should the Engineer have directed the replacement of a facility, the necessary work and payment shall be done in accordance with Sections 550 and 601 and Article 104.02 respectively of the "Standard Specifications".

### **PROTECTION OF TREES AND SHRUBS**

Extra care shall be exercised when operating equipment around trees or shrubs. Injured branches or roots shall be pruned in a manner satisfactory to the Engineer and shall be painted where the cut was made. Roots exposed during excavating operations shall be neatly pruned and covered with topsoil. This work shall be done prior to construction and shall be paid for at the contract unit price each for TREE PRUNING (1 TO 10 INCH DIAMETER) and TREE ROOT PRUNING.

### **MAINTENANCE OF ROADWAY**

Beginning on the date that the Contractor begins work on this project, the Contractor shall assume responsibility for the normal maintenance of all 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 required for this work will be provided by the Contractor as required by the Engineer.

### **PUBLIC SAFETY AND CONVENIENCE**

The Contractor shall maintain entrances along the proposed improvement. Interference with traffic movements and inconvenience to owners of abutting property and the public shall be kept to a minimum. Any delays or inconveniences caused by the Contractor by complying with these requirements shall be considered as incidental to the contract, and no additional compensation will be allowed.

Contractors shall plan their work so that there will be no open holes in the pavement and that all barricades will be removed from the roadway during non-working hours, except where required for public safety.

### **RESPONSIBILITY FOR VANDALISM**

The contractor shall be responsible for the defacement of any concrete pours before they have set up. Concrete sidewalk, driveway, or curbing that has been defaced, in the opinion of the Engineer, shall be removed and replaced by the contractor at his expense.

### **AGGREGATE SHOULDERS, TYPE A 6"**

This work shall conform to the requirements of Section 481 of the "Standard Specifications" with the exception that the material shall be limited to crushed gravel, crushed stone or crushed concrete. The plasticity index requirements and the requirements for adding water at the central mixing plant will be waived.

This work shall be paid for at the contract unit price per square yard for AGGREGATE SHOULDERS, TYPE A 6".

### **AGGREGATE SUBGRADE, 12"**

The work shall be done in accordance with the applicable portions of Section 207 of the Standard Specifications. The material shall conform with Article 1004.06 of the Standard Specifications except as follows.

1. Crushed Stone, Crushed Blast Furnace Slag, and Crushed Concrete will be permitted. Steel slag and other expansive materials will not be permitted.

Sieve Size	Percent Passing
6"	97 +/- 3
4"	90 +/- 10
2"	45 +/- 25
#200	5 +/- 5

2. Gravel, Crushed Gravel, and Pit Run Gravel

Sieve Size	Percent Passing
6"	97 +/- 3
4"	90 +/- 10
2"	55 +/- 25
#4	30 +/- 20
#200	5 +/- 5

The aggregate subgrade shall be placed in two lifts consisting of an 8 inch lower lift and a 4 inch (100mm) nominal thickness top lift of capping aggregate having a gradation of CA 6. Reclaimed asphalt pavement (RAP) meeting Article 1004.07 of the Standard Specifications and having 100% passing the 3 inch (75mm) sieve and well graded down through fines may also be used as capping aggregate. RAP shall not contain steel slag or other expansive material. Results of the Department's tests on the RAP material will be the determining factor for consideration as expansive. A vibratory roller meeting the requirements of Article 1101.01(g) of the Standard Specifications 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.

This work shall be paid for at the contract unit price per square yard for AGGREGATE SUBGRADE, 12", which price shall include the capping aggregate.

**AGGREGATE SURFACE COURSE FOR TEMPORARY ACCESS**

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. The minimum compacted thickness shall be 6 in. 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. The minimum compacted thickness shall be 9 in. The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

(c) Road. The minimum width shall be 24 ft. The minimum compacted thickness shall be 9 in. 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.”

Replace the Note in Articles 402.02(a) and 481.02(a) of the “Standard Specifications” with the following:

“Note: Reclaimed asphalt pavement (RAP) may be used as aggregate in surface course for temporary access entrances and/or Aggregate Shoulders, Type B. The RAP material shall be reclaimed asphalt pavement 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. The RAP shall also meet the following requirements:

One hundred percent of the RAP material shall pass the 1 ½ inch 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.”

#### **BASE FOR TELESCOPING SIGN SUPPORT, SPECIAL**

Description: This work shall consist of furnishing and installing a permanent underground base for a 2"x2" Telescoping Steel Sign Support Post. This base will be required when the support signs are to be installed on sidewalks, median islands or other concrete locations.

Materials shall be in accordance with the following;

1. STEEL TUBE. The steel tube shall have an outside dimension of 70mm x 70mm (2.756 inches by 2.756 inches). The length of the square tube shall be a minimum of 300mm (11.81 inches). The wall thickness must be 3.2mm (.125 inches). Two 90° flanges are to be welded on opposing sides of the square tube. The flanges will be located on the center line of the width of the tube, 152mm (6 inches) from the end of the tube. The flange will have a wall thickness of 3.2mm (.125 inches) and a total length of 63.5mm (2.50 inches). The entire tube is to be hot dipped galvanized so that the minimum uniform zinc coating is .053mm (.0021 inches).



2. POLYURETHANE SLEEVE. The polyurethane sleeve will consist of two sleeves. The lower sleeve will have a base which measures 78mm x 78mm (3.07 inches x 3.07 inches) with a minimum thickness of 5mm (.19 inches). The lower sleeve will narrow to 63.5mm (2.5 inches) where the sleeve fits inside the steel tube. The sleeve will have a thickness of .12mm (.47 inches). The overall height of the sleeve will measure 70mm (2.75 inches) with 65mm (2.55 inches) fitting inside the tube. A tapered opening will be 60mm (2.36 inches) deep to allow the square post to easily fit inside the sleeve. The beginning of the taper will measure 55mm (2.16 inches) and narrow to 51.1mm (2.03 inches) and at the end of the 12mm (.47 inch) long taper.

The upper sleeve will have a 52mm x 52mm (2.05 inch x 2.05 inch) opening to allow passage of 2"x2" square tube. The top of the upper sleeve will have flange 24mm (.93 inch) thick which measures 65mm x 65mm (2.55 inches x 2.55 inches) on the outside dimension. The flange tapers to a thickness of 5mm (.19 inches) to create an overall outside dimension of 79mm x 79mm (3.11 inches x 3.11 inches). The upper sleeve will measure 65mm x 65mm (2.55 inches x 2.55 inches) where the sleeve fits inside the galvanized steel tube. The thickness of the sleeve inside the tube will be 14mm (.55 inches). The sleeve has a surface of 70mm (2.75 inches) in length.

The polyurethane has the following general properties:

Shore hardness A	65	ASTM D2240
Tensile strength	22.6 Mpa	
Split tear	22 Kn/m	ASTM D470
Compression set	16%	ASTM D395

The base will be measured for pavement in individual units complete in place.

This work will be paid for at the contract unit price each BASE FOR TELESCOPING SIGN SUPPORT, SPECIAL.

### **BITUMINOUS MATERIALS (PRIME COAT)**

Prime coat shall meet the specifications of Article 406.06 (b) of the "Standard Specifications for Road and Bridge Construction" with the following revisions and additions:

Emulsified asphalt shall only be used between the dates of May 15th and September 1st. On or before May 15th and on or after September 1st, RC-70 asphalt shall be used in lieu of emulsified asphalt.

On days between May 15th and September 1st, when the air temperature is in question, the exact type of priming asphalt shall be determined by the Engineer.

Shields, covers or other suitable equipment shall be provided by the Contractor to protect the motoring public, adjoining pavement, curbs, or structures during the application of prime coat. The Contractor will be required to present a weight ticket of the truckload prior to applying the prime coat. After application the truck shall then be weighed again in order to determine the net weight of prime coat that has been placed. Both tickets shall be stamped by the certified weighmaster.

The Contractor shall erect (to the Engineer's satisfaction) 36 inch minimum FRESH OIL AHEAD signs prior to the prime coat application. Prime Coat material shall be SS-1 on existing bituminous surfaces and MC30 on aggregate surfaces (subject to the date and temperature restrictions indicated above). This work shall be paid for at the contract unit price per gallon for BITUMINOUS MATERIALS (PRIME COAT).

#### **CATCH BASINS, TYPE A**

This work shall be performed in accordance with the requirements of Section 602 of the "Standard Specifications", and Standard Drawing 602001. The half trap option as shown on Standard 602001 will not be required, and a 24" sump shall be provided. CATCH BASINS, TYPE A will be paid for at the contract unit price per each for the diameter specified, and frame and grate or frame and lid specified.

#### **CDS UNIT**

This work shall be in accordance with Section 602 of the "Standard Specifications". The Contractor shall install a precast stormwater filtration treatment unit in accordance with the notes and details shown on the plans and in conformance with these Specifications. The precast stormwater filtration treatment unit shall be a continuous deflective separator (CDS®) unit, model PMSU20-15 as manufactured by CDS Technologies, Inc., 16360 Monterey Road, Suite 250, Morgan Hill, CA 95037. CDS Technologies® may be reached by telephone at (888) 535-7559, or CDS Tech (Midwest office) 708-482-8550.

The SWTU unit(s) shall be non-mechanical and gravity driven, requiring no external power requirements. The SWTU unit(s) shall be equipped with a stainless steel expanded metal screen having a screen opening of 4700-microns (4.7 mm or 0.185 inches). The separation screen shall be self-cleaning and non-blocking for all flows diverted to it, even

when flows within the storm drain pipeline exceed the SWTU unit's design treatment flow capacity. When storm flows exceed the SWTU unit's design treatment flow capacity, a portion of this flow will bypass the SWTU unit over the unit's diversion weir.

### **Storm Water Treatment Unit Design**

#### Hydraulic Treatment Capacity and Separation Screen Design:

**Model PMSU20 25, Minimum Treatment Flow Capacity:** The Model PMSU20 25 storm water treatment unit shall have a minimum treatment flow capacity of 1.7-cfs (48.1 l/s). This treatment capacity shall be achieved without any flow bypassing the overflow weir of the treatment unit.

**Model PMSU30 20, Minimum Treatment Flow Capacity:** The Model PMSU30 20 storm water treatment unit shall have a minimum treatment flow capacity of 2.2-cfs (62.3 l/s). This treatment capacity shall be achieved without any flow bypassing the overflow weir of the treatment unit.

#### Storm Water Filtration Treatment Unit Structure and Design:

The structures shall be designed to withstand H2O traffic and earth loadings to be experienced during the life of the treatment unit.

The storm water filtration treatment unit(s) shall be furnished with the following sump capacities:

**Model PMSU20 25, Minimum Sump Capacity:** The Model PMSU20 25 shall be furnished with a sump that has a minimum volume of 1.45 cubic yards (1.05 cubic meters) for storage of sediments, organic solids, and other settleable trash and debris.

**Model PMSU30 20, Minimum Sump Capacity:** The Model PMSU30 20 shall be furnished with a sump that has a minimum volume of 2.09 cubic yards (1.52 cubic meters) for storage of sediments, organic solids, and other settleable trash and debris.

#### Oil and Grease Removal Performance:

The SWTU unit(s) are equipped with a conventional oil baffle to capture and retain oil and grease and Total Petroleum Hydrocarbons (TPH) pollutants as they are transported through the storm drain system during dry weather (gross spills) and wet weather flows. The conventional oil baffle within a unit assures satisfactory oil and grease removal from typical

urban storm water runoff.

**Model PMSU20 25, Minimum Oil Storage Capacity:** The Model PMSU20 25 shall be furnished with a baffle that provides a minimum gross oil storage volume of 143 gallons (544 liters).

**Model PMSU30 20, Minimum Oil Storage Capacity:** The Model PMSU30 20 shall be furnished with a baffle that provides a minimum gross oil storage volume of 146 gallons (552 liters).

The SWTUs shall be equipped with a conventional oil baffle to capture and retain oil and grease and Total Petroleum Hydrocarbons (TPH) pollutants as they are transported through the storm drain system during dry weather (gross spills) and wet weather flows.

The SWTU unit(s) shall also be capable of receiving and retaining the addition of Oil Sorbents within their separation chambers. The addition of the oil sorbents can ensure the permanent removal of 90% to 95% of the free oil and grease from the storm water runoff. The addition of sorbents enables increased oil and grease capture efficiencies beyond that obtainable by conventional oil baffle systems. Sorbent material shall be added in accordance with the "USE OF OIL SORBENTS" specifications provided by CDS Technologies.

#### Solids Removal Performance Requirements:

The SWTU(s) shall remove oil and sediment from storm water during frequent wet weather events. The SWTU(s) shall treat a minimum of 85% to 95% of the annual runoff volume and be capable of removing 80 percent of the total suspended sediment load (TSS) and 90% to 95% of the floatable free oil with the addition of sorbent material without any loss of material at bypass flow rate conditions. The SWTU must be capable of trapping silt and clay size particles in addition to large particles. The SWTU units shall capture 100% of the floatables and 100% of all particles equal to or greater than the screen size opening (4.7mm) for all flow conditions up to unit's design treatment flow capacity, regardless of the particle's specific gravity. The SWTU unit shall capture 100% of all neutrally buoyant material equal to or greater than the screen size opening (4.7 mm) for all flow conditions up to its design treatment flow capacity. There shall be no flow conditions up to the design treatment flow capacity of the SWTU unit; in which a flow path through the SWTU unit can be identified, that allows the passage of a particle equal to or larger than the screen for any neutrally buoyant object. The SWTU unit shall permanently retain all captured material for all flow conditions of the storm drains to include flood conditions. The SWTU unit shall not allow materials that have been captured within the unit to be flushed through

or out of the unit during any flow condition to include flood and/or tidal influences.

Materials Design for CDS Unit Manufacture Concrete:

Stormwater filtration treatment units shall be manufactured from concrete and have a 28 day compressive strength of not less than 5,000 pounds per square inch (psi), using either Type 1 or Type 3 Portland Cement. Aggregates shall conform to ASTM Designation C33, except the requirement for gradation shall not apply. Reinforcement shall consist of wire conforming to ASTM Designation A185 or A497 or of deformed bars Grade 60 steel conforming to ASTM Designation A615.

Hardware/Covers/Hatches:

The separation screen shall be fabricated from stainless steel conforming to ASTM Designation A316. Fasteners used to install the screen or support structure shall be stainless steel, 316. PSW series screens may have Ultra high molecular weight (UHMW) or High Density Poly (HDPE) blocks may be fastened to the support structure and embedded into the concrete structure to facilitate screen installation.

The access covers for the unit shall be designed to withstand direct traffic loading (H-20), and shall provide manhole frames/covers of the dimensions shown on the drawings. The covers may be manufactured from cast iron steel. Covers shall be manufactured by Campbell Foundries for CDS logo cover/frames with H-20 loading rates or equivalent also being acceptable.

Fiberglass:

Fiberglass components shall meet the National Bureau of Standards PS-15. Components shall be coated with isophalic polyester gelcoat and hand laid up to 4 layers of 2 oz. mat and fabric on the mold. Cure 8-16 hours until completely dry before de-molding. The components are to be smoothed; if needed, of any rough edges to provide a clean product.

Manufacturers Performance Certificate:

The manufacturer of the SWTU unit(s) shall submit details and shop drawings of sufficient detail for the Engineer to confirm that no available flow paths exist that would allow the passage of an object greater than the screen size opening (4.7 mm) used on the SWTU(s). Additionally, the manufacturer shall submit a "Manufacturers Performance Certificate" certifying that the SWTU unit(s) shall achieve the specified removal efficiencies listed in these specifications. This Manufacturer's Performance Certification of removal

efficiencies shall clearly and unequivocally state that the listed removal efficiency shall be achieved throughout the entire treatment flow processed by the SWTU unit with no attenuation of removal efficiency as the flow increase up to the minimum treatment flow capacity specified above.

Warranty:

The manufacturer of the SWTU unit shall guarantee the filtration unit free from defects in materials and workmanship for a period one year following installation. Equipment supplied by the manufacturer shall be installed and used only in the particular application for which it was specifically designed.

Installation: The CDS unit is to be installed per manufacturer's recommendations.

Basis of Payment: This work shall be paid for at the contract unit price per each for CDS Unit, which price shall include all materials, labor and equipment necessary to install the complete unit.

**COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24**

This work shall be performed in accordance with Section 606 of the "Standard Specifications" and Standard Drawing 606001 with the following exceptions:

In addition to the requirements of Standard Drawing 606001, 1" expansion joints shall be constructed at maximum intervals of 150 feet.

Concrete curing methods shall be limited to methods as specified in Article 1020.13 (a) [1], [2] and [3].

The end treatments as specified in the plans shall conform to the special details. Where no end treatment is specified, curb and gutter endings shall be transitioned to a flat section in 6 feet.

Transitions between Type B-6.24 and Type M-6.12 Curb and Gutter, Type B-6.24 and Type M-2.12 Curb and Gutter, and between Type B-6.24 and Type B-6.12 Curb and Gutter will be paid for at the contract unit price per foot for COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24.

This work will be paid for at the contract unit price per foot for COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24.

### **CONCRETE MEDIAN REMOVAL**

This item shall consist of the removal of existing concrete medians, as shown on the plans or as directed by the Engineer, in accordance with Section 440 of the "Standard Specifications" except as described herein.

The Contractor is advised that neither the internal fill material of the existing medians, nor the thickness of the concrete median surface is known.

The material below the surface of the median shall be removed in accordance with Section 202 of the "Standard Specifications."

It is not known if the concrete median is doweled to the curb & gutter, nor if it is reinforced. No additional compensation shall be allowed for doweled or reinforced concrete medians.

Measurement of area for Concrete Median Removal shall include the area of gutter on the adjacent curb & gutter if necessary.

This work shall be paid for at the contract unit price per square foot for CONCRETE MEDIAN REMOVAL, which price shall include all labor, materials, and equipment necessary to complete the work in place.

### **CURB RAMPS FOR SIDEWALKS**

Curb ramps for sidewalks shall be constructed in accordance with the Highway Standard 424001-01. Ramps will be constructed at all driveway and crosswalk locations or as designated by the Engineer. The Engineer shall determine which type of ramps shall be constructed, and the curb and gutter will be installed accordingly.

The cost of this work will be included in the contract unit price per square foot for PORTLAND CEMENT CONCRETE SIDEWALK, 5" and per foot for COMBINATION CONCRETE CURB AND GUTTER of the type specified.

### **DRILL AND GROUT DOWEL BARS AND TIE BARS**

Work under this item shall be performed in accordance with sections 442, 420, and 1000 of the Standard Specifications, except as herein modified.

This work shall consist of furnishing and installing 18" long, 1-1/2" diameter epoxy coated dowel bars and 30" long, No. 6 epoxy coated tie bars in existing Portland Cement Concrete (PCC) bases where new PCC Curbs and Gutters and new PCC Bases are poured against existing PCC Bases at locations shown on the Plans and as designated by the Engineer.

Materials shall meet the requirements of Article 1006.06 of the Standard Specifications for Dowel Rods and Article 1024.01 of the Standard Specifications for Nonshrink Grout or one of the approved chemical adhesives as listed by the Bureau of Materials and Physical Research. Epoxy adhesives shall not be allowed.

Bars shall be located on 24" centers or as indicated on the plans. Individual bar locations shall be shifted at least 5-inches away from existing cracks, joints and unsound concrete. Holes for dowel bars shall be drilled with suitable equipment for this purpose to the depth shown and to a diameter large enough to allow grouting around the dowel bar or tie bar. The dowel bars or tie bar shall be secured in the drilled holes with nonshrink grout. The grout shall be allowed to cure before the concrete for new curb and gutters and bases are poured.

This work will be not be paid for separately but instead shall be considered as incidental to cost of COMBINATION CONCRETE CURB AND GUTTER, PORTLAND CEMENT CONCRETE PAVEMENT, and PORTLAND CEMENT CONCRETE BASE COURSE of the size and thickness indicated on the plans.

### **DRIVEWAY PAVEMENT REMOVAL**

This work shall be done in accordance with Section 440 of the "Standard Specifications" and includes all driveway pavement types including aggregate, aggregate bituminous surfaced, and/or portland cement concrete.

This work will be measured and paid for at the contract unit price per square yard for DRIVEWAY PAVEMENT REMOVAL.



### **DUST CONTROL WATERING**

This work shall consist of applying a dust retardant to the project roadways at the request of the Engineer.

This work shall be done in accordance with Article 107.36 of the “Standard Specifications” except as modified herein.

The Contractor may use any dust retardant he so chooses as long as the specified dust retardant has been approved by the Engineer. Should the Contractor choose to use dust retardant to aid in the prosecution of his/her work, the product used must be approved by the Engineer. If applied at the discretion of the Contractor, no additional compensation shall be allowed.

The dust retardant shall consist of a non-toxic, non-hazardous, and non-flammable material.

For this pay item, one unit of **DUST CONTROL WATERING** is considered to be 1000 gallons of the approved dust retardant used. The Contractor shall ensure that any piece of equipment used for the applying of the dust retardant shall be equipped with a metering device to account for the quantity of dust retardant used. For each day that dust retardant is applied, the Contractor and the Engineer shall agree on the volume of dust retardant used.

This work shall be paid for at the contract unit price per unit for **DUST CONTROL WATERING**, which price shall include all labor, materials, and equipment necessary to perform the work herein.

### **EARTH EXCAVATION (SPECIAL) AND FURNISHED EXCAVATION**

All Earth Excavation and placement of Furnished Excavation shall be in accordance with Sections 202, 204, and 205 of the "Standard Specifications." At locations where existing pavement removal is indicated in the plans, or as otherwise directed by the Engineer, it will be necessary to remove underlying unsuitable soils. Following excavation to the bottom of the proposed subgrade elevation and to a point 10± inches below all previously undisturbed grass areas, the remaining subgrade area shall be proof rolled to determine the need for additional excavation of unsuitable material. The Engineer shall designate the limits of unsuitable soil removal, which shall be backfilled with POROUS GRANULAR EMBANKMENT, SPECIAL meeting the requirements of section 207 and the project special provisions for FURNISHED EXCAVATION meeting the requirements of Article 204.02.

The work required to construct the roadbed consists of inspection and preparation of the subgrade soils (by disking and drying), and placement and compaction of material meeting the requirements of

Article 204.02 to the lines and grades shown on the cross section sheets. The Engineer in the field must verify all exposed subgrade at the time of construction by cone penetrometer tests on the subgrade in accordance with the guidelines in the Illinois Department of Transportation's "Subgrade Stability Manual." A Soil Report for the project is available for inspection at the offices of the Engineer. Copies of soil boring logs are included in this booklet.

Remaining areas of fill outside the limits of the roadbed; i.e. outside the limits of curb and gutter and/or bituminous shoulders shall also be filled with Furnished Excavation, however, it can meet the requirements of Section 202 and 205 except that **NO ASPHALT MATERIAL SHALL BE USED.**

The cross section sheets for this project show approximately 21,718 cubic yards of Earth Excavation (Special) and 6,746 cubic yards of Furnished Excavation.

The quantities of FURNISHED EXCAVATION have been calculated assuming that all material excavated under the pay item EARTH EXCAVATION (SPECIAL) will be removed from the job site. If the Contractor excavates suitable material and places it in areas of the project requiring embankment under the pay item EARTH EXCAVATION (SPECIAL), as described in Section 202 of the Standard Specifications and as approved by the Engineer, the applicable deduction to the Furnished Excavation quantity shall be made as defined by BDE Special Provision 80072 except that a 15% shrinkage factor shall be used. The Contractor shall not be allowed a change in the unit prices for EARTH EXCAVATION (SPECIAL) or FURNISHED EXCAVATION based on these changes to the quantities.

The volumes of FURNISHED EXCAVATION shown are the compacted volumes. This work shall be paid for at the contract unit price per cubic yard as FURNISHED EXCAVATION.

EARTH EXCAVATION (SPECIAL) shall consist of:

1. Bituminous and aggregate shoulder removal
2. Excavation to subgrade elevation.
3. Excavation for topsoil placement.

Earth moved more than once due to construction staging and/or procedures selected by the Contractor will not be paid for separately but shall be considered included in the cost of EARTH EXCAVATION (SPECIAL).

An estimated quantity of excavation for undercutting has been included in the quantity of REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL and is shown on the plans. Undercutting shall only be allowed at the discretion of the Engineer after it is determined that the provision of Section 301 of the "Standard Specifications" will not yield results to allow timely

progress on the project.

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

**ENGINEER'S FIELD OFFICE, TYPE A (MODIFIED)**

This item shall be in accordance with Article 670.02 of the "Standard Specifications" except for the following. Adequate all-weather parking spaces shall be provided to accommodate a minimum of 8 Vehicles. Electronic security system will not be required. The following shall be furnished and meet the approval of the Engineer.

- (a) 3 desks with minimum working surface 42" x 30" (1060 x 760 mm) each, and 3 non-folding chairs with upholstered seat and back.
- (b) 1 four-post drafting table with minimum top size of 37 1/2" x 48" (950 x 1220 mm) The top shall be basswood or equivalent and capable of being titled through an angle of 50 degrees. An adjustable height drafting stool with upholstered seat and back shall also be provided.
- (c) 1 free standing legal size file cabinet with lock, and 4 drawers with Underwriters' Laboratories insulated file device, with a 350 degree one hour rating.
- (d) 4 folding chairs.
- (e) 1 equipment cabinet with lock of minimum inside dimension of 44" high x 24" wide x 30" deep (1120 x 600 x 760 mm). The walls shall be of steel with a 3/32" (2.4 mm) minimum thickness with concealed hinges and enclosed lock constructed in such a manner as to prevent entry by force. The cabinet assembly shall be permanently attached to the structural element of the field office in a manner to prevent theft of the entire cabinet.
- (f) 1 electric water cooler dispenser with hot/cold and refrigerator
- (g) 1 electric desk type tape-printing calculator.
- (h) 1 telephone with touch tone; telephone answering machine for exclusive use by the Engineer with time and date feature; and caller ID service and hardware.

- (i) 1 pencil sharpener
- (j) 1 copy machine capable of reproducing by dry process, prints up to legal size (8 1/2" x 14") (216 x 356 mm) from non-transparent master sheets as black or blue lines on white paper, including maintenance reproduction paper, activating agent and power source.
- (k) 1 fax machine with paper.

Penalty – Failure by the Contractor to meet the specified occupancy date for any field office or field laboratory shall be grounds for assessment of a penalty of \$100 per day for each calendar day thereafter that such facility remains incomplete in any respect. Failure by the Contractor to equip, heat, cool, power, supply or clean the field office shall be grounds for assessment of a penalty of \$100 per day for each calendar day that the field office remains incomplete after receipt of written notification from the Engineer. Such penalty shall be deducted from monies due or to become due the Contractor under the Contract.

This item will be paid for at the contract unit price per calendar month for ENGINEER'S FIELD OFFICE, TYPE A (MODIFIED).

### **EXPLORATION TRENCH , SPECIAL**

This work shall be done in accordance with Section 213 of the Standard Specifications except as modified herein. This item shall consist of excavating a trench at the locations directed by the Engineer for the purpose of locating existing TILE LINES, GAS LINES, and other UTILITIES within the construction limits of the proposed improvement.

The trench shall be deep enough to expose the tile line, and the width of the trench shall be sufficient to allow proper investigation to determine if the tile line needs to be replaced.

The exploration trench shall be backfilled with trench backfill meeting the requirements of the Standard Specifications. This shall be paid for at the contract unit price for trench backfill.

An estimated length of exploration trench has been shown in the summary of quantities to establish a unit price only, and payment shall be based on the actual length of trench explored without a change in unit price because of adjustment in plan quantities.

This work shall be paid for at the contract unit price per foot for EXPLORATION TRENCH, SPECIAL, and no extra compensation will be allowed for any delays, inconveniences or damage sustained by the Contractor in performing the work.

### **FIRE HYDRANT TO BE MOVED**

This work shall be done in accordance with Section 564 of the "Standard Specifications for Road and Bridge Construction" and Section 46 of the "Standard Specifications of Water and Sewer Main Construction in Illinois" except as modified herein and as shown on the details on the plans. This item includes the removal of an existing fire hydrant as shown on the plans. This item also includes installation of a cap or plug at the existing tee, after the existing auxiliary valve, installation of new hydrant lead piping; new fire hydrant and valve box, thrust blocking, backfill and any necessary fittings.

All new piping shall be cement lined, Class 52 Ductile Iron with fittings in accordance with AWWA C104-80, C110-82, and C151-81.

All valve boxes shall be the same size and type as those existing.

All work including the installation of a cap after the tee, new pressure connections, and operation of valves shall be coordinated with the Village.

Disinfecting shall be in accordance with AWWA C601 for Disinfection Procedures when Cutting into or Repairing Existing Mains.

Prior to any work on the water system, the dimensions of the existing main shall be verified to assure proper sizing of new fittings. All water main work shall be coordinated so that there are no water main shut-downs.

Pressure connections will be paid for separately and not included in this item of work.

This work will be paid for at the contract unit price per each for FIRE HYDRANT TO BE MOVED which price shall be payment in full for all labor, equipment, and materials necessary to complete the work specified herein.

### **INLET AND OUTLET PROTECTION**

This work shall be in conformance with Section 280 of the Standard Specifications and the following:

The inlet and outlet protection shall consist of silt filter fence placed around the perimeter of the

structure to be protected. The silt filter fence shall be supported by 1 inch x 2 inch wooden stakes with a minimum length of 3 feet. The stakes shall be spaced no more than 3 feet apart, and shall be driven into the ground a minimum of 8 inches. The filter fabric shall be installed in a backfilled trench 6 inches deep, and securely attached to the posts by any method approved by the Engineer.

This work will be paid for at the contract unit price per each for INLET AND OUTLET PROTECTION regardless of the size or type of structure being protected.

### **JUNCTION CHAMBER**

This work shall consist of assembling and installing a junction chamber structure for the Deerfield Parkway project, at the location shown in the plans. The structure will consist of a cast in place concrete structure of the size and configuration shown in the plans, complete with a Type 1 Frame, Closed Lid as illustrated on the plan details. The Contractor shall insure that the elevations of the inlet and outlet orifices on the junction chamber are installed at the elevations shown in the plans.

Construction shall be in accordance with Section 602 of the I.D.O.T Standard Specifications for the Road and Bridge Construction and as shown in the plans.

The Type 1 Frame and Lid shall be considered as incidental to the cost of the Junction Chamber.

This work will be paid for at the contract unit price for each JUNCTION CHAMBER which includes all labor, materials, frame and lid, fasteners, and equipment for completing the work in place.

### **LANDSCAPING MATERIAL GUARANTEE**

All landscaping planted materials to be incorporated into the project shall be installed in accordance with Section 253 of the Standard Specifications, except that the Village of Buffalo Grove shall have the right to approve the Nursery proposed to provide the landscaping planted materials, and shall have the right to approve the landscaping planted materials proposed to be incorporated into the project by selecting specific specimens at the nursery, not more than 2 months prior to the preparation of the plant materials for transplanting.

In addition, all obviously dead and defective landscaping planted materials incorporated into the project shall be replaced at no expense to the Village of Buffalo Grove prior to the end of the first

growing season after installation and prior to the end of the 2nd full growing season after installation. A final inspection shall be held at leaf-out time of the Spring following the 2nd full growing season and any additional dead or defective landscaping planted materials shall be replaced at that time. No landscaping planted materials shall be required to be replaced after that which is replaced as a result of the final inspection.

The Village of Buffalo Grove shall be the sole judge as to the future viability of all landscaping planted materials during the required inspections and as to which material shall be replaced. All replacement material shall be approved by the Village of Buffalo Grove at the nursery.

### **MAILBOX TO BE MOVED**

This work shall consist of relocating existing mailboxes, as required to accommodate construction where shown on the plans or as directed by the Engineer. Mailboxes inadvertently damaged during construction shall be replaced or restored to original condition as directed by the Engineer. It also includes constructing temporary mailbox locations to accommodate construction staging. The new location of the mail box shall be subject to the approval of the Engineer. In addition, the Contractor shall contact the local postmaster to make sure the placement of the mailboxes is in conformance with local standards.

The relocated mailbox shall be installed on a new 4" x 4" square or 4 1/2" diameter round treated wood post, unless otherwise directed by the Engineer. The new post shall be embedded no more than 24" into the ground. The old post shall be removed and disposed of in accordance with the requirements of Article 202.03 of the "Standard Specifications". The resulting hole shall be backfilled with suitable excavated material as approved by the Engineer. These items shall be considered as incidental to the contract in accordance with Article 107.20 of the Standard Specifications, with the following exception:

The new posts shall be paid for at the contract unit price per each for MAILBOX POST.

### **MAINTENANCE OF TEMPORARY EROSION CONTROL SYSTEMS**

The temporary erosion control systems installed by the Contractor shall be properly maintained as directed by the Engineer to control siltation at all times during the life of the contract. MAINTENANCE OF TEMPORARY EROSION CONTROL SYSTEMS includes repair of the various systems, removal of entrapped sediment and cleaning of any silt filter fabric. The sediment shall be removed as directed by the Engineer during the contract period and disposed of according to Article 202.03.

Accumulated silt in sediment basins shall be removed at any time the basin becomes 75 per cent filled. Any additional materials and work required by the Engineer will be measured and paid for as specified. Work performed under this item is to be submitted by the Contractor to the resident Engineer on a force account basis in accordance with 109.04 (b) of the Standard Specifications. The Resident engineer may use any, all or none of this item. If the Contractor fails to maintain the temporary erosion control systems as directed by the Engineer, the Engineer may at the expiration of a period of 48 hours, after having given the Contractor written notice, proceed to maintain the systems as deemed necessary, and the cost thereof will be deducted from any compensation due, or which may become due the Contractor under this contract.

The following formula shall be used to determine the bid price for this item:

<u>Contract Pay Item</u>	<u>Per Cent of Bid Item</u>
Temporary Ditch Checks (Special)	20%
Perimeter Erosion Barrier	100%
Inlet and Outlet Protection (Special)	60%
Seeding, Sodding or Sodding (complete) *	20%

\* if more than one of these items is included in the pay items then the sum shall be used.

<b>SAMPLE CALCULATION</b>						Proportion
	Plan		Bidder's		Pro-	times
Pay item description	Quantity	Unit	Unit Price	Total Price	portion	Total Price
Temporary ditch check (special)	1	EACH	\$80.00	\$80.00	0.2	\$16.00
Perimeter erosion barrier	1217	FOOT	\$2.70	\$3,285.90	1	\$3,285.90
Inlet and outlet protection (special)	1	EACH	\$85.00	\$85.00	0.6	\$51.00
Sodding (complete)	2729	SQ YD	\$5.00	\$13,645.00	0.2	\$2,729.00
Sum = unit price for Maintenance of Temporary Erosion Control Systems =						\$6,081.90



<b>WORK SHEET FOR THIS PROJECT</b>						Proportion
Pay item description	Plan	Unit	Bidder's	Total Price	Pro-	times
	Quantity		Unit		portion	Total Price
Temporary ditch check (special)	20	EACH			0.2	
Inlet and outlet protection	46	EACH			0.6	
Temporary erosion control seeding	607	POUND			0.2	
Sodding, Salt Tolerant	29,383	SQ YD			0.2	
Sediment control, drainage structure inlet filter	142	EACH			0.6	
Sum = unit price for Maintenance of Temporary Erosion Control Systems =						

If a bid is submitted for this item which is not based upon the required formula, then the unit price will be corrected by the Department in accordance with section 103.01 of the Standard Specifications.

MAINTENANCE OF TEMPORARY EROSION CONTROL SYSTEMS will be bid at the contract unit price lump sum and paid for on a force account basis.

**PAINT PAVEMENT MARKING – RAISED MEDIAN**

This work shall be done in accordance with Section 780 of the Standard Specifications and the Lake County Standard Pavement Marking Details included in the plans.

This work will be paid for at the contract unit price per square foot for PAINT PAVEMENT MARKING – RAISED MEDIAN.

**PIPE UNDERDRAINS 4” (MODIFIED)**

Pipe underdrain material shall be limited to (1) perforated polyvinyl chloride (PVC) pipe [1040.09], (2) perforated corrugated polyvinyl chloride (PVC) pipe with a smooth interior [1040.15], (3) perforated corrugated polyethylene (PE) pipe with a smooth interior [1040.17] or (4) corrugated polyethylene (PE) pipe with a smooth interior [1040.20]. The pipe shall be wrapped with a fabric envelope meeting the requirements of Section 1080.01 in the “Standard Specifications”.

Rodent shields and 16 inch square concrete collars (where required) as shown on LC6010 in the plans, shall be incidental to PIPE UNDERDRAINS, 4" (MODIFIED).

PIPE UNDERDRAINS, 4" (MODIFIED) will be paid for at the contract unit price per foot, which price shall include furnishing and placing all pipe, fittings, fabric envelope, connecting pipes, rodent shields, and concrete collars.

### **PORTABLE CHANGEABLE MESSAGE SIGN**

This work consists of furnishing, placing and maintaining changeable message sign(s) at the location(s) shown on the plans or as directed by the Engineer.

The sign(s) shall be trailer mounted. The message panel shall be at least 2.1 m (7 ft) above the pavement, present a level appearance, and be capable of displaying up to eight characters in each of three lines at a time. Character height shall be 450 mm (18 in.).

The message panel shall be of either a bulb matrix or disc matrix design controlled by an onboard computer capable of storing a minimum of 99 programmed messages for instant recall. The computer shall also be capable of being programmed to accept messages created by the operator via an alpha-numeric keyboard and able to flash any six messages in sequence. The Contractor is required to promptly program and/or reprogram the computer to provide the messages as directed by the Engineer.

The message panel shall be visible from 400 m (1/4 mile) under both day and night conditions. The letters shall be legible from 250 m (750 ft). Whenever the sign(s) are displaying messages, they shall be considered a traffic control device. At all times when no message is displayed, they shall be considered equipment.

The message sign shall include automatic dimming for nighttime operation and a power supply capable of providing 24 hours of uninterrupted service.

The Contractor is required to provide all preventive maintenance efforts s(he) deems necessary to achieve uninterrupted service. If service is interrupted for any cause and not restored within 24 hours, the Engineer shall cause such work to be performed as may be necessary to provide this service. The cost of such work shall be borne by the Contractor or deducted from current or future compensation due Contractor.

The furnishing, placing, and maintaining of Portable Changeable Message Sign(s) shall be paid for per calendar month for each sign as CHANGEABLE MESSAGE SIGN. Payment will be

made in quarter month increments and the minimum payment will be 0.25 months.

**POROUS GRANULAR EMBANKMENT, SPECIAL**

The work shall conform to Section 207 of the "Standard Specifications" except that the gradation shall be as follows:

Crushed Stone, Crushed Blast Furnace Slag, and Crushed Concrete

Sieve Size	Percent Passing
* 6"	90 +/- 10
2"	45 +/- 25
#200	5 +/- 5

Gravel, Crushed Gravel, and Pit Run Gravel

Sieve Size	Percent Passing
* 6"	90 +/- 10
2"	60 +/- 25
#4	40 +/- 10
#200	5 +/- 5

\* For undercut less than 6", sieve size may be 4".

Rolling each lift of the porous granular material with a vibratory roller meeting the requirements of Article 1101.01 (g) of the "Standard Specifications" should be sufficient to obtain the desired keying or interlock and necessary compaction. The Engineer shall verify that keying has been obtained.

POROUS GRANULAR EMBANKMENT, SPECIAL shall be used in all widening and pavement reconstruction areas as shown on the typical sections. The existing subgrade shall be covered with Geotechnical fabric for Ground Stabilization prior to placement of the Porous Granular Embankment, Special. Undercut and PGE placement in addition to the plan thickness will be done as field conditions warrant and as approved by the engineer. No adjustment in unit price will be allowed for an increase or decrease in quantities from the estimated quantities shown in the plans.

This work shall be paid for at the contract unit price per ton for POROUS GRANULAR EMBANKMENT, SPECIAL, and per square yard for GEOTECHNICAL FABRIC FOR GROUND STABILIZATION.

### **PRESSURE CONNECTION**

This work consists of making a connection from the existing water main to new water main lead piping with a tapping sleeve without halting service to the existing main. The second dimension refers to the diameter of the new water main being connected to the existing water main. The connection shall be constructed in accordance with all applicable portions of Section 561 of the "Standard Specifications" and Section 46 of the "Standard Specifications of Water and Sewer Main Construction in Illinois" with the following materials:

1. The MJ tapping sleeve shall meet or exceed all material specifications as listed below and be suitable for use with standard mechanical joint resilient wedge gate valves per ANSI/AWWA C509-94. The mechanical joint outlet shall be a one-piece casting having a plain end and a mechanical joint gland TIG and MIG welded a full 360 degrees.
2. The tapping sleeve shall have a Mechanical Joint Outlet Gasket, Branch Sealing Gasket, and complete Circle Gasket attached to the sleeve at the factory.
3. The Branch Sealing Gasket and Complete Circle Gasket shall be contained within stainless steel Retaining Rings.
4. The tapping sleeve shall incorporate Drop-in, Square-Neck, Track-Head bolts with a minimum of two (2) longer starter bolts.
5. A minimum quantity of 16 drop-in bolts and 6 mechanical joint outlet bolts shall be provided.
6. The Branch opening shall be larger in diameter than nominal to allow the use of a full size cutter.
7. All welding shall be passivated so as to return the welded stainless steel to its original corrosion resistant state.
8. There shall be no Paper or Plastic adhesive Labels attached to the tapping sleeve, any information appearing on the sleeve shall be stenciled.
9. The tapping sleeve shall be Factory Hydrostatically Tested on pipe to a minimum of 300 psi to verify proper fit and weld integrity with zero leakage allowed.
10. Sleeves shall be the PowerSeal Model 349OMJ stainless steel tap sleeve with mechanical joint outlet as manufactured by PowerSeal Corporation or an approved equal.

## MATERIAL SPECIFICATIONS

1. The shell shall be 304 (18-8) stainless steel.
2. Mechanical joint outlet gland and plain end shall be per ANSI / AWWA- Clio I A21.10 as applicable and cast of 304 (18-8) stainless steel.
3. The Armor Plate shall be 304 (18-8) stainless steel.
4. The Lugs shall be 304 (18-8) stainless steel. The Lugs shall be welded (GMAW) to the shell.
5. The Nuts shall be Heavy-Hex, of 304 (18-8) stainless steel and lubricated to prevent galling or seizing.
6. The Bolts shall be 304 (18-8) Stainless Steel, or equal, 5/8" NC thread.
7. The Gaskets shall be of virgin Nitrile (Buna-N, NBR), or equal, compounded for water service.
8. The gate valve used as part of the Pressure Connection shall be a resilient wedge epoxy coated gate Valve either Mueller A2360, Watrous 2500. All buried hardware shall be non-Ferrous material.

This work shall be paid for at the contract unit price per each for PRESSURE CONNECTION, of specified diameters, which price shall include all labor, materials, and equipment required to complete the work in place, including the tapping sleeve, gate valve, valve box and trench backfill.

## PROTECTIVE COAT

This work shall conform to the requirements of Articles 420.21 and 1023.01 of the "Standard Specifications", except that the protective coat shall be applied in all cases regardless of the calendar date limitations contained in Article 420.21. The protective coating shall be applied to the exposed surfaces of the Portland cement concrete pavement, concrete sidewalk, and concrete curb and gutter. Portland cement concrete curing shall be limited to methods specified in Article 1020.13 (a) [1], [2] and [3].

PROTECTIVE COAT will be paid for at the contract unit price per square yard.

## RAISED REFLECTIVE PAVEMENT MARKER REMOVAL

This work shall be done in accordance with Section 783 of the Standard Specifications, and shall include removal of the raised reflective pavement marker and patching the hole with leveling binder, compacted and leveled to the same elevation as the existing pavement surface. RAISED REFLECTIVE PAVEMENT MARKER REMOVAL will be paid for at the contract unit price per each.

### **RAISED REFLECTIVE PAVEMENT MARKER**

This work shall be done in accordance with Section 781 of the "Standard Specifications" and the following:

Sawcutting the pavement for the installation of raised pavement markers shall be done by means of dry cutting the pavement. The Contractor shall maintain the pavement and the surrounding area in clean, dry condition and shall vacuum the dust and milling from the pavement surface.

The method of cutting the pavement may be altered by the Contractor provided the pavement surface and the surrounding area is cleaned to the satisfaction of the Engineer. Alternate methods of cutting the pavement shall be approved by the Engineer. All costs for cleaning the pavement, regardless of the method, shall be incidental to the unit price per each for RAISED REFLECTIVE PAVEMENT MARKER:

### **RECONSTRUCTING EXISTING STRUCTURES**

This work shall be done in accordance with Section 602 of the "Standard Specifications" and the following:

Reconstruction shall occur at all existing structures which must be adjusted to grade within the proposed pavement structure. Existing precast reinforced concrete sections shall not be sawcut. A new precast barrel section with a flat top slab or cone shall be constructed with a new frame and grate or lid to match the proposed grade.

When reconstruction is specified and new frames and grates or lids are to be used, this work will be paid for at the contract unit price each for CATCH BASIN TO BE RECONSTRUCTED with new frame and grate or lid; MANHOLES TO BE RECONSTRUCTED with new frame and grate or lid; VALVE VAULTS TO BE RECONSTRUCTED with new frame and closed lid; which price shall include all materials, including frames, grates, lids, concrete and reinforcement for aprons, and the sand cushion, steps and flat slab tops, when required, and all excavation and backfilling.

**REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND SUBGRADE TREATMENT**

Soil tests taken for this project indicate that at various locations, soft unstable soils of varying depths exist which may require removal and replacement with porous granular embankment prior to the placing of roadway base course or earth embankment material. The soils reports are located in these Special Provisions.

At the following locations the Contractor shall prepare the subgrade in accordance with Article 301.03 of the "Standard Specifications". If the Engineer then determines that stabilization cannot be obtained, undercutting to the maximum depth indicated and replacement with porous granular embankment, special and geotechnical fabric shall be accomplished. These locations are as follows:

<u>Location</u>	<u>Undercut Depth</u>	<u>Replacement Material</u>	<u>Treatment Width</u>
Sta. 15+25.80 to Sta. 25+17	12"	PGES	Widening
Sta. 34+81 to Sta. 37+78	4"	PGES	Widening
Sta. 43+50 to Sta. 46+65	12"	PGES	Widening
Sta. 55+46 to Sta. 58+45	4"	PGES	Full Width
Sta. 61+50 to Sta. 63+75	6"	PGES	Full Width
Sta. 65+25 to Sta. 67+50	6"	PGES	Full Width
Sta. 70+50 to Sta. 72+38	6"	PGES	Full Width
Sta. 116+85 to Deerfield Pkwy.	4"	PGES	Widening

Deerfield Pkwy. to 6"  
Sta. 131+04

PGES

Widening

The plans, profiles and cross-sections show the approximate limits of removal and replacement with porous granular embankment for the above locations. Quantities POROUS GRANULAR EMBANKMENT, SPECIAL have been computed to include these locations.

At all locations the actual extent of removal and replacement shall be determined by the Engineer in the field at the time of construction. Undercuts deeper than the maximums indicated above shall be justified based upon cone penetrometer testing. In all cases, the undercut shall extend to one foot outside the edges of the pavement (or the backs of the curbs in curb and gutter sections) and come up at a 1:1 slope to the existing ground surface (see the typical sections in the plans).

A proof rolling procedure acceptable to the Engineer shall be followed in order to verify the stability of the subgrade prior to the placement of earth embankment or porous granular embankment. Verification of subgrade stability shall be done through the use of a cone penetrometer in conjunction with the Illinois Department of Transportation's Subgrade Stability Manual.

This work shall be paid for at the contract unit price per cubic yard as REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND SUBGRADE TREATMENT.

### **REMOVE AND RELOCATE WATER MAIN**

The work of this pay item consists of new cement lined, Class 52 Ductile Iron water main pipe complete in place, including, but not limited to, excavation; bracing; bedding and covering of pipe; locator wire; detectable tape; trench dewatering, including erosion and siltation control methods and devices to provide protection to environment from all pumping operations; protection, repair or replacement of utilities; trench backfill with excavated material; testing; disinfection; finished grading; all water main pipe fittings; all restrained type joints; thrust blocking; saw cutting existing street and driveway pavement; removal, hauling, and disposal of waste excavated materials; protection, replacement, or repair of utilities; and removal of existing water main.

Water main Pipe Fittings shall be ductile iron fittings in accordance with AWWA C104-80, C110-82, and C151-81 with restrained type mechanical joints complying with ANSI A21.10 or A21.53. Use cement lining complying with ANSI A-21.4, standard thickness. Use A-304 stainless steel bolts with nuts and washers of series 300 stainless steel per ASTM A194. Provide restrained joint type fittings that are compatible with the system utilized, as specified by the



manufacturer. Restrained joint type fittings shall be installed on all fittings branch, runs, and at all valves as directed by the Resident Engineer. Acceptable products: Meg-A-Lug system.

Locator Wire shall be No. 12 AWG, single strand, single conductor, insulated copper locator wire on top of the water mains and fittings. The locator wire shall continue through valve vaults and up to the frame and be placed continuously to grade at all fire hydrants. Detectable Tape shall be blue in color and placed 1-foot above the pipe.

Testing and inspection shall conform to the "Standard Specifications for Water and Sanitary Sewer Main Construction in Illinois" and the Buffalo Grove Public Works.

Pressure tests shall be witnessed by the Director of the Buffalo Grove Public Works or his authorized representative.

Hydrostatic tests shall be performed in accordance with the requirements of the standard. The Contractor shall furnish all gauges and measuring devices and make all taps into the pipe. This work shall not be paid for separately but shall included in the contract unit price per linear foot of respective size water main.

The Contractor shall give the Buffalo Grove Public Works at least 48 hours notice prior to the time that construction will begin and official tests will be made. Depending on public hazard or other reasons, the Buffalo Grove Public Works may direct when tests of the completed sections of water main shall be made and may order such tests to be made in relatively short sections. There shall be no additional compensation given for any work done or material used in order to complete this test.

Before water mains are placed into service, they shall be thoroughly flushed, pressure-tested and disinfected with chlorine gas, witnessed by a representative of the Buffalo Grove Public Works. The following procedure shall be followed:

1. Pressure Test

Pressure tests shall be performed after initial flushing to remove any air in the water main and brought to one hundred fifty (150) pounds per square inch (psi) and held at that pressure for two (2) hours, If there is any drop in pressure, the cause shall be determined and any necessary repairs shall be made by the contractor, and the pressure test repeated until a passing test is achieved, as noted in the standard Specifications for Water and sewer Main Construction in Illinois. The pressure gauge shall be an analog types with increments of five (5) psi or less,

2. Flushing

The mains shall be flushed, discharging water through each of the hydrants on the system until the water runs clear.

3. Chlorination

Chlorination of mains shall be performed by an accredited chlorination specialist and at the Contractor's expense,

4. Use of Water

Water shall not be used from the mains until satisfactory results are received by the Buffalo Grove Department of Public Works or his representative on bacteriological samples submitted to the laboratory. Bacteriological testing of water mains following disinfection shall be done by the Buffalo Grove Public Works' Laboratory or an approved equal.

This work consists of excavation required to expose the existing 8" or 16" diameter water main, cutting the water main, taking the existing 8" or 16" diameter water main out of service, and removal of the existing 8" or 16" water main. After all the services have been satisfactorily connected to the new system, the CONTRACTOR shall remove the existing water main at the locations shown on the Engineering Plans or as directed by the Resident Engineer. This work shall not begin until the proposed water main is in place and operating.

This price shall include all labor, equipment, pipe material, related appurtenances, fittings, bedding material, thrust blocking, testing and chlorination necessary to install the water main as shown in the plans and as herein specified.

Payment for trench backfill beneath proposed pavement and sidewalks, or within two (2') feet of the limits of pavement shall not be measured for payment but shall be considered incidental to REMOVE AND RELOCATE WATER MAIN, 8" or REMOVE AND RELOCATE WATER MAIN, 16".

Water main relocation items are contingent, and only to be used if a storm sewer conflicts exist.

This work as described herein shall be paid for at the Contract Unit Price per foot for REMOVE AND RELOCATE WATER MAIN, 8" or REMOVE AND RELOCATE WATER MAIN, 16".

**REMOVING EXISTING DRAINAGE STRUCTURES**

This item shall consist of the removal and satisfactory disposal of existing drainage structures at the locations specified on the contract plans in accordance with applicable portions of Section

605. This work shall include the removal of any concrete encased existing storm structures that were done as part of improvements to the existing storm structures.

The Contractor shall be required to verify that all sewer inlet or outlet pipes have been accounted for on the contract plans, and that the removal of the respective drainage structure will not disrupt existing subsurface drainage systems. The existing inlet and outlet pipe will be maintained and reconnected to the new structure then backfilled with TRENCH BACKFILL meeting the approval of the Engineer. Care should be taken not to damage these pipes. Any pipe damaged will be replaced at the Contractors expense.

Existing storm sewer pipe shall be exposed prior to removal to determine if pipe is damaged. If determined by engineer, the sewer pipe is in poor condition the contractor shall remove and dispose of concrete sewer pipe and replace with same size reinforced concrete pipe as specified in plans. Reinforced concrete sewer pipe replacement shall be paid for at the contract unit price per lineal foot for storm sewer Type 1 of the size removed.

The salvage castings shall be re-used on site or stored at a convenient location on the jobsite prior to delivery to the respective Village, Department, or Lake County, depending on the ownership of the castings. The Contractor shall be responsible for determining the ownership of the castings.

This work shall be paid for at the contract unit price per each REMOVING INLETS, REMOVING MANHOLES, and REMOVING CATCH BASINS and shall include all materials, labor, and equipment required.

### **RESTRICTED DEPTH MANHOLES AND RESTRICTED DEPTH CATCH BASINS**

This work shall be in conformance with Section 602 of the "Standard Specifications" and Standard Drawings 602001 (Catch Basin Type A), or 602401 (Manhole Type A), except that a reinforced concrete slab as per Standard 602601 will be used in lieu of the cone section. In addition, a 24-inch sump will be provided on the Catch Basin.

For structures having Type 8 grates, a 24-inch inside diameter by 4-inch (minimum) high riser shall be installed on the flat slab to provide earth cover over the slab for vegetation.

This work will be paid for at contract unit price per each for RESTRICTED DEPTH MANHOLES or RESTRICTED DEPTH CATCH BASINS, of the diameter and with the frame and lid or grate specified.

### **SAWED CONTRACTION JOINTS (SUPPLEMENTARY)**

Sawed contraction joints with dowel bar assemblies shall be constructed in P.C.C. pavement widening as extensions of existing cracks in the adjacent pavement where directed by the Engineer. The work under this item shall conform to applicable portions of Section 420 of the "Standard Specifications".

SAWED CONTRACTION JOINTS (SUPPLEMENTARY), which includes dowel bar assemblies, will be measured in linear feet, complete in place. Only those contraction joints which exceed five (5) in a length of one hundred (100) linear feet of P.C.C. pavement widening shall be measured for payment. The initial five (5) contraction joints and dowel bar assemblies in a one-hundred (100) foot length of P.C.C. pavement widening will be considered to be part of the work included in the pay items for the pavement being constructed.

### **SAWING ASPHALT OR CONCRETE FOR REMOVAL ITEMS**

The work shall consist of sawing joints in the existing roadway, bituminous surface, curb and gutter and sidewalk in order to separate those portions to be removed from those which will remain in place. This work shall be performed at the locations specified on the plans and/or as otherwise designated by the Engineer. In areas of full-depth removal, the saw cuts shall also be full-depth.

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

It is the Contractor's responsibility to determine the thickness of the existing pavement and whether or not it contains reinforcement.

The work as described shall include all materials, labor, & equipment required, and shall be incidental to the removal of the item being saw-cut.

### **SEDIMENT CONTROL, DRAINAGE STRUCTURE INLET FILTER**

*Description:* This work shall consist of the furnishing, installation, and removal of a drainage structure inlet filter assembly, consisting of a frame and filter bag, to collect sediment in surface stormwater runoff at locations shown on the plans or as directed by the Engineer.

The Contractor shall inspect the work site and review the plans to determine the number and dimensions of the various types of drainage structure frames (circular and rectangular) into which the inlet filters will be installed prior to ordering materials.

The drainage structure inlet filter assembly shall be installed under the grate on the lip of the drainage structure frame with the fabric bag hanging down into the structure.

The drainage structure inlet filter assembly shall remain in place until final removal of the assembly is directed by the Engineer. The drainage structure inlet filter shall remain the property of the Contractor.

Final removal of the assembly shall include the disposal of debris or silt that has accumulated in the filter bag at the time of final removal. Periodic cleaning of the filter is paid for separately as maintenance of temporary erosion control systems.

*Materials:* The drainage structure inlet filter shall be the "Catch-All Inlet & Pipe Protector, as manufactured by marMac Construction Products, Inc., P.O. Box 447, McBee, South Carolina 29101, (847) 962-7622, or approved equal.

The drainage structure inlet filter assembly consists of a steel frame with a replaceable geotextile fabric bag attached with a steel band with locking cap that is suspended from the frame. A clean bag and a used steel frame in good condition, meeting the approval of the Engineer, may be substituted for new materials.

The drainage structure inlet filter assembly shall be rigid steel meeting the requirements of ASTM-A36. The frame shall include an overflow feature that is welded to the frame's ring. The overflow feature shall be designed to allow full flow of water into the structure if the filter bag is filled with sediment. The dimensions of the assembly frame shall allow the drainage structure grate to fit into the inlet filter assembly frame opening. The assembly frame shall rest on the inside lip of the drainage structure frame for the full variety of existing and proposed drainage structure frames that are present on this contract.

The drainage structure inlet filter assembly bag shall be constructed of a polypropylene geotextile fabric with a minimum weight of 4 ounces per square yard, a minimum flow rate of 145 gallon per minute per square foot, and designed for a minimum silt and debris capacity of 2 cubic feet. The filter bag shall be reinforced with an outer layer of polyester mesh fabric with a minimum weight of 4 ounces per square yard. The filter bag shall be suspended from the steel frame with a stainless steel band and locking cap. The inlet filter assembly frame shall not cause the drainage structure grate to extend higher than 1/8 inch above the drainage structure frame.

*Basis of Payment:* This work shall be paid for at the contract unit price per each for SEDIMENT CONTROL, DRAINAGE STRUCTURE INLET FILTER, which price shall include all costs for labor, materials, equipment, and incidentals necessary to perform the work.

### **STORM SEWER REMOVAL**

This work shall consist of the removal of existing storm sewer pipe and pipe culverts as indicated in the plans or as directed by the Engineer. The work shall be performed in accordance with applicable portions of Section 551 of the Standard Specifications except that the storm sewer pipe removed shall not be reused. Trench backfill required due to removal of storm sewer shall be considered part of this work.

Sealing any openings in existing structures, pipes or culverts is included in the cost of removal and considered part of this work.

The work will be measured and paid for per lineal foot for STORM SEWER REMOVAL of the size indicated in the Plans.

### **STORM SEWERS, SPECIAL**

This work shall conform to the requirements of Sections 603 of the Standard Specifications and the Illinois Environmental Protection Agency, Division of Public Water Supplies "Technical Policy Statements" concerning Illinois Pollution Control Board Rules and Regulations, Chapter 6, Rule 212, E through F.

The following materials are permitted for Storm Sewers, Special:

- a) Cement mortar lined ductile cast iron pipe, thickness Class 52 or greater, with push-on joints.
- b) Reinforced concrete pipe, steel cylinder type, with rubber and steel joints.
- c) Reinforced concrete pressure pipe with rubber and steel joints.

STORM SEWERS, SPECIAL will be paid for at the contract unit price per foot for the diameter or span and rise specified and type specified.

### **SUPPLEMENTAL WATERING**

This work shall conform to Section 201 of the "Standard Specifications" and shall be applied at the rate of two (2) gallons per square yard, and only when directed by the Engineer. This work shall be measured and paid for as specified under Articles 201.10 and 201.11 of the "Standard Specifications."

### **TEMPORARY DITCH CHECK (SPECIAL)**

This work shall conform to Section 280 and Section 1080 of the "Standard Specifications", and the Triangular Silt Dike<sup>TM</sup> detail included in the plans. Temporary Ditch Check (Special) shall be limited to Triangular Silt Dikes<sup>TM</sup> or an approved equal.

#### Manufacturer

Triangular Silt Dike Company, Inc.  
608 Greenwood  
Midwest City, OK 73110-1632  
(405)741-7406

#### Area Representative/Dealer

GSI Geosynthetics, Inc.  
428 N. Pewaukee Road  
Waukesha, WI 53188  
(800) 444-5523

Each silt dike shall consist of an approximate 7 feet long triangular section of urethane foam covered with a geotextile fabric, and installed on a geotextile fabric apron. Triangular Silt Dikes<sup>TM</sup> shall be installed at the locations specified on the Erosion Control Plan, or as directed by the Engineer, and in accordance with the detail included in the plans and the manufacturer's recommendations.

The geotextile fabric shall conform to Article 1080.05 of the "Standard Specifications" for Geotechnical Fabric for French Drains.

The ditch checks shall become the property of the Contractor upon their removal. The maintenance of this item shall be included with and paid for as part of the contract lump sum price for Maintenance of Temporary Erosion Control Systems.

This work shall be paid for at the contract unit price per each for TEMPORARY DITCH CHECK (SPECIAL), and shall include all labor, equipment and materials necessary for installation and removal.

## TEMPORARY INFORMATION SIGNING

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

Materials shall be in accordance with the following portions of the "Standard Specifications":

	Item	Section/Article
a..	Sign Base (see Notes 1 and 2)	1090
b.	Sign Face (see Note 3)	1091
c.	Sign Legends	1092
d.	Sign Supports	1093
e.	Overlay Panels (see Note 4)	1090.01

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

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

Note 3. All sign faces shall be Type A except that all orange signs shall meet the requirements of Article 1084.02(b).

Note 4. The overlay panels shall be 0.08" thick..

The sign sizes and legend sizes shall be as shown on District One Standard TC-22, included in the plans. Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Articles 702.05 and 720.04 of the "Standard Specifications". The signs shall be 7 feet above the near edge of pavement and a minimum of 2 feet beyond the edge of paved shoulder. A minimum of two posts shall be used.

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

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

This work will be paid for at the contract unit price per square foot for TEMPORARY INFORMATION SIGNING.



**TEMPORARY PAINT PAVEMENT MARKING 4", 6", AND 24" WHITE**  
**TEMPORARY PAINT PAVEMENT MARKING 4" AND 12" YELLOW**

This work shall conform to Section 703 of the Standard Specifications. This work shall be measured and paid for as specified under Articles 703.07 except as modified herein.

Temporary Paint Pavement Marking shall be paid for at the contract unit price per foot for TEMPORARY PAINT PAVEMENT MARKING 4" WHITE, TEMPORARY PAINT PAVEMENT MARKING 6" WHITE, TEMPORARY PAINT PAVEMENT MARKING 24" WHITE, and TEMPORARY PAINT PAVEMENT MARKING 4" YELLOW and TEMPORARY PAINT PAVEMENT MARKING 12" YELLOW.

**TEMPORARY PAVEMENT**

This item consists of all material, labor and equipment necessary to construct 8" thick bituminous base course sections or portland cement concrete pavement 6" to be used as a temporary pavement, temporary driveways and 4" temporary sidewalks as specified on the Maintenance of Traffic or Roadway Improvement Plan sheets. The material used shall be Bituminous Base Course, Superpave, Non Class I, 8", Bituminous Base Course, Superpave Non Class I, 4" or Portland Cement Concrete Pavement, 6". This work shall be in accordance with Section 355 of the Standard Specifications except that removal of the temporary pavement shall be included in the price for TEMPORARY PAVEMENT.

At locations where temporary pavement is indicated in the plans, or as otherwise directed by the Engineer, it may be necessary to remove underlying unsuitable soils or to provide furnished excavation to the bottom of the temporary pavement elevations. The work required to construct the Temporary Pavement consists of inspection and preparation of the subgrade soils (by disking and drying), and placement and compaction of material meeting the requirements of Article 204.02. The Engineer in the field must verify all exposed subgrade at the time of construction by cone penetrometer tests on the subgrade in accordance with the guidelines in the Illinois Department of Transportation's "Subgrade Stability Manual." The required earth work necessary to construct temporary pavement sections shall be included in the price for TEMPORARY PAVEMENT.

Temporary pavement shall be measured and paid for at the contract unit price per square yard for TEMPORARY PAVEMENT which price shall include all costs in full for materials, labor, equipment and all incidental work necessary to prepare the subgrade, place and subsequently remove and dispose of the bituminous base course material or Portland cement concrete pavement material.

### **TOPSOIL FURNISH AND PLACE, 4" AND 12"**

This item shall conform to Section 211 of the Standard Specifications. The Contractor shall provide all topsoil from outside the right of way. Plan quantities reflect 4" and 12" thick topsoil placement in all disturbed areas. The excavation required to accommodate a nominal 4" and 12" thick layer of topsoil has been included in the pay item EARTH EXCAVATION (SPECIAL).

This work shall comply with Section 211 of the "Standard Specification" and the "Illinois State Agency Historic Resources Preservation Act" (Public Act 86-707, effective January 1, 1990). Under this Act:

1. The Contractor shall complete an Environmental Survey Request Form for Topsoil/Use Areas (Form ESRF-BU 6/85 included herein), along with all required attachments, and submit them to the Engineer at the earliest possible date.
2. The Engineer shall submit the Environmental Survey Request to the Illinois Department of Transportation for review and approval. Any costs incurred associated with said review and approval will be borne by the Contractor.
3. The Contractor shall not begin work on any Topsoil/Use areas until the Environmental Survey Request has been approved.

The Contractor shall collect one representative soil sample from the proposed growing surface which shall be analyzed by an agricultural laboratory approved by the Engineer. The Contractor shall submit the proposed laboratory name and address to the Engineer at the pre-construction conference. The soils analysis shall include (but is not limited to) the recommended application rates of nitrogen phosphorus and potassium fertilizer nutrients. The cost of the soil analysis will not be paid for, but will be included in the cost TOPSOIL FURNISH AND PLACE, 4" and 12".

Existing sidewalks, curbs, structures, trees and other plant materials that are to remain in place shall be protected from damage. Any damage caused by the Contractor shall be replaced at the Contractor's expense.

Excavation and grading around tree roots and plant materials shall be done by hand.

Additional material required to bring the area to grade will not be paid for separately but considered incidental to TOPSOIL FURNISH AND PLACE, 4" AND 12". Additional material must meet the approval of the Engineer.

The surface of the topsoil shall be free from clods, stones, sticks and debris and shall conform to the lines, grades and the minimum thickness shown on the plans. One rolling of the entire surface shall be made.

All material "tracked" down the street shall be removed each day. All sidewalks, driveways, and pavements shall be left in a broom-cleaned condition.

TOPSOIL FURNISH AND PLACE, 4" AND 12" will be measured and paid for at the contract unit price per square yard, which price shall include the cost of removal and disposal of existing material, furnishing and placing topsoil, raking, rolling, disking or tilling if required. No measurement will be made of existing material removed.

#### **TREE REMOVAL (6 TO 15 UNITS DIAMETER)**

This work shall be done in accordance with the applicable portions of Section 201 of the "Standard Specifications", and the following. Cut trees and limbs must be disposed of within 5 working days.

This work will be measured and paid for at the contract unit price per unit diameter for TREE REMOVAL (OF THE SIZE RANGE SPECIFIED).

#### **TREE ROOT PRUNING**

Prior to any trenching or excavation in the area of a tree, tree roots shall be cut with appropriate root pruning equipment to a minimum of 24 inches deep. The cuts shall be 6 to 12 inches closer to the tree than the construction limit. This allows for root regeneration (within the 6 to 12 inch area) during the construction period. Pruning shall not be done at the construction limit, since the cut surfaces of the roots remain exposed resulting in root dieback.

TREE ROOT PRUNING will be paid for at the unit price per each tree.

#### **TREE TRUNK PROTECTION**

Prior to construction, the Contractor shall manually erect a temporary fence around trees located within the project work zone limits or as designated by the Engineer. The temporary fence shall be similar to plastic or wood lathe snow fence barriers or other highly visible barriers as approved by the Engineer. Single strand wire or plastic flagging

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is not acceptable. The barrier shall be maintained in proper location until completion of construction at which time the contractor will remove and dispose of the barrier.

This work will be paid for at the contract unit price per each tree for TREE TRUNK PROTECTION and shall include all labor, material, and equipment, including the temporary fence.

### **TRENCH BACKFILL**

This work shall conform to the requirements of Section 208 of the Standard Specifications, L.C.D.O.T. Standard Drawing LC6009 and the following, except that the aggregate may be a local material meeting the approval of the Engineer. The maximum pay width for backfilling storm sewer and culvert trenches shall be the outside diameter of the pipe plus 18 inches for trench depths up to 3 feet, and the outside diameter of the pipe plus 36 inches for trench depths over 3 feet.

TRENCH BACKFILL will be paid for at the contract price per cubic yard.

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Section No. 03-00088-00-FP  
Job No.: C-91-266-05  
Project No. M-8003(524)  
Contract No.: 83807

## **TRAFFIC SIGNAL SPECIFICATIONS AND SPECIAL PROVISIONS**

## LAKE COUNTY DIVISION OF TRANSPORTATION TRAFFIC SIGNAL SPECIFICATIONS

**Effective: January 9, 2004**

All work and equipment performed and installed under this Contract:

County Highway Name:	Deerfield Parkway
County Highway Number:	CH A47
County Highway Section:	89-00049-00-RP

shall be governed by and shall comply with:

SPECIFICATION	ADOPTED/DATED
The State of Illinois "Standard Specifications for Road and Bridge Construction" referred to as "Standard Specifications"	Latest Edition
The State of Illinois "Manual on Uniform Traffic Control Devices for Streets and Highways," referred to as "MUTCD"	Latest Edition
The National Electrical Code referred to as "NEC"	Latest Edition
The National Electrical Manufacturers Association (All publications for traffic control items) referred to as "NEMA"	Latest Edition
The International Municipal Signal Association ("Official Wire & Cable Specifications Manual,") referred to as "IMSA"	Latest Edition
The Institute of Transportation Engineers Technical Report No. 1, (A Standard for Adjustable Face Vehicular Traffic Control Heads) referred to as "ITE"	Latest Edition
AASHTO "Standard Specifications" Structural Supports for Highway Signs, Luminaires, and Traffic Signals	Latest Edition
Supplemental Specifications and Recurring Special Provisions	Latest Edition

The following Traffic Signal Special Provisions supplement the above specifications, manuals, and codes. In case of conflict with any part or parts of said documents, these Special Provisions shall take precedence and shall govern.

The following terms and acronyms are used:

IDOT	Illinois Department of Transportation
District 1	IDOT District 1
LCDOT	The Lake County Division of Transportation
Engineer	The Resident Engineer
Traffic Engineer	The County Traffic Engineer – LCDOT

The construction, installation, modification and/or removal work shall be accomplished at the following intersection(s):

Deerfield Parkway at IL Route 83 (Mundelein Road)  
Deerfield Parkway at Buffalo Grove Road  
Deerfield Parkway at Highland Grove Drive  
Deerfield Parkway at Fire Station No. 26  
Deerfield Parkway at Weiland Road

The intent of this Special Provision is to prescribe the materials and construction methods commonly used in traffic signal installations. All material furnished shall be new. The locations and the details of all installations shall be indicated on the plans or as directed by the Engineer.

The work performed under this contract shall consist of furnishing and installing all traffic signal work as specified on the plans and as specified herein in a manner acceptable and approved by the Engineer.

**MAST ARM SIGN PANELS.**

Add the following to Article 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 LCDOT. All aluminum signs shall have a white reflectorized legend and border on a green reflectorized background, type AZ sheeting. The sign face shall not have any holes. 3M Scotch Joining Systems bonding tape or an approved equal shall be used in place of screws or rivets. The Signfix Aluminum Channel Framing System is currently recommended, but other brands of mounting hardware, or bonding tape are acceptable based upon LCDOT approval.

**INSPECTION OF ELECTRICAL SYSTEMS.**

Add the following to Article 802.01 of the Standard Specifications:

All cabinets, including temporary traffic signal cabinets, shall be assembled by an approved equipment supplier in District One. LCDOT reserves the right to request that any controller and cabinet be tested at a District 1 approved equipment supplier's facility prior to field installation. Such testing will be at no extra cost to the contract. All permanent or temporary "railroad interconnected" controllers and cabinets, shall be newly constructed, built, tested and approved by the controller equipment vendor, in the vendor's District 1 approved 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.**

Revise Article 802.02 of the Standard Specifications to read:

Any damaged equipment or equipment not operating properly from any cause whatsoever shall be repaired and/or replaced with new equipment provided by the Contractor at no additional cost to the Contract and/or owner of the traffic signal system, to the satisfaction of 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 802 of the Standard Specifications:

Restoration of the traffic signal work area shall be incidental to the related pay item such as foundation, conduit, handhole, trench and backfill, etc. and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be restored to match the previously existing conditions. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded, in accordance with Section 250 and 252 of the "Standard Specifications" respectively.

**SUBMITTALS.**

Revise Article 802.04 of the Standard Specifications to read:

The Contractor shall provide:

- a. All material approval requests shall be submitted a minimum of seven (7) days prior to the delivery of equipment to the job site, or within thirty (30) calendar days after the contract is awarded, or within fifteen (15) calendar days after the preconstruction meeting, whichever is earliest.
- b. Seven (7) copies of a letter listing the manufacturer's name and the model numbers of the proposed equipment. The Traffic Engineer will review the letter and determine whether the proposed equipment is approved for use. The copies will be stamped as "approved", "not approved", or "approved as corrected" and returned to the Contractor.
- c. Two (2) copies of material catalog cuts.
- d. Seven (7) copies of mast arm poles and assemblies drawings.
- e. The contract number or permit number, project location/limits and corresponding pay item number must be on each sheet of the letter, material catalog cuts and mast arm poles and assemblies drawings as required in items b, c and d.
- f. 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 802.07 of the Standard Specifications to read:

- a) Existing traffic signal installations and/or any electrical facilities at locations included in this contract 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 it is 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 pay item MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION, TEMPORARY TRAFFIC SIGNAL



INSTALLATION, and/or MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION, shall become the full responsibility of the Contractor. The Contractor shall supply the Engineer and the County's Traffic Signal Maintenance Contractor a 24-hour emergency contact name and telephone number. The Contractor shall provide sufficient qualified personnel to respond to all notifications of malfunctions on a round-the-clock basis (24 hours a day, 7 days a week). The Contractor is required to keep a time and date log of each response, from the time of the initial report to the time of final permanent repair.

- b) When the project has a pay item for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION, TEMPORARY TRAFFIC SIGNAL INSTALLATION, and/or MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION, the Contractor must notify the Traffic Engineer at (847) 362-3950 of their intent to begin any physical construction work on the project or any portion thereof. This notification must be a minimum of seven (7) working days prior to the start of construction to allow sufficient time for an inspection of the existing traffic signal installation(s) and the transfer of maintenance to the Contractor. If work is started prior to the inspection, maintenance of the traffic signal installation(s) will be immediately transferred to the Contractor without an inspection. The Contractor shall then 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 to or the replacement of damaged equipment must meet the approval of the Engineer at the time of final inspection or the traffic signal installation will not be accepted.
- c) Contracts that don't include traffic signal installations or modifications, but do include pay items for milling or pavement patching which may result in the destruction of traffic signal loops, do not require maintenance transfer. These contracts do 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 Traffic Engineer at (847) 362-3950, at which time arrangements will be made to adjust the traffic controller timing to compensate for the absence of detection.
- 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 unavoidable down time. Any plan to shutdown the traffic signal installation for a period exceeding fifteen (15) minutes must receive prior approval from the Engineer. Approval to shutdown the traffic signal installation will only be granted during the hours of 9:00 A.M. to 3:00 P.M. on weekdays. Shutdowns will not be allowed during inclement weather, weekends 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 Division, the County's Traffic Signal Maintenance Contractor or the public, shall be investigated and repairs started within one hour. Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Contractor shall restore service and complete permanent repairs in accordance with the following Repair Timetable. The Traffic Engineer reserves the right to assign any work not completed within this timeframe to the County's Traffic Signal Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Traffic Signal 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 County's Traffic Signal Maintenance Contractor may inspect any signaling device on the Division's highway system at any time without notification.

Unless specifically stated to the contrary, all items shall be repaired within the time frame

described in the Repair Timetable. The times listed are noncumulative. Any repairs not specifically covered in the Repair Timetable, or described elsewhere, shall be completed within a time frame matching the most similar line item in the Repair Timetable.

**REPAIR TIMETABLE**  
 (non cumulative)

<u>ITEM</u>	<u>RESPONSE TIME</u>	<u>SERVICE RESTORATION</u>	<u>PERMANENT REPAIRS</u>
<b>KNOCKDOWNS/FAILURE/DAMAGE:</b>			
Cabinet	1 hr	24hrs	2 wks
Controller (Master)	1 hr	NWD	2 wks
Controller (Local)	1 hr	24hrs	2 wks
Detector Loop	1 hr	n.a.	30 days
Detector Loop (Priority)	1 hr	n.a.	10 days
Loop Detector/Amplifier	1 hr	4 hrs	2 wks
MVP Sensor	1 hr	4 hrs	2 wks
PTZ Camera	2 hrs	48 hrs	2 wks
Detector Interface Card/Mini Hub	1 hr	4 hrs	2 wks
Modem	1 hr	NWD	2 wks
Load Switch	1 hr	2 hrs	2 hrs
Signal Head/Lenses	1 hr	2 hrs	NWD
Pole/Mast Arm	1 hr	2 hrs	ENG
Cabling/Conduit	1 hr	4 hrs	ENG
Interconnect	1 hr	NWD	ENG
Graffiti/Advertising	NWD	NWD	NWD
Telemetry, Electrical	1 hr	2 hrs	NWD
Indicators/switches/LEDs/displays	NWD	n.a.	2 wks
Outages not covered elsewhere	1 hr	2 hrs	NWD
Filter/Cleanliness/fans/thermostat	NWD	NWD	n.a.
Misalignment (conflicting)	1 hr	2 hrs	NWD
Misalignment (non-conflicting)	48hrs	48hrs	1 wk
<b>COMPLAINTS/CALLS/ALARMS:</b>			
Timing/Phasing/Programming	1 hr	2 hrs	ENG
Coordination Alarm/Cycle Fail	NWD	ENG	ENG
Controller Alarm/Status Change	1 hr	NWD	1 wk
Detector Alarm/Status change	NWD	NWD	ENG
CMU Flash/Local Flash	1 hr	2 hrs	1 wk
Door Open/Maint. Req.	1 hr	2 hrs	NWD

LEGEND: hr=hour, hrs=hours, NWD=next working day, wk=week, wks=weeks, ENG=acceptable to Engineer, days=calendar days, n.a.=not applicable

**TRAFFIC SIGNAL INSPECTION (TURN-ON).**

Revise Article 802.10 of the Standard Specifications to read:

It is LCDOT's intent to have all electric work completed and the equipment field-tested by the vendor, prior to LCDOT's "turn-on" field inspection. 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. In the event the Traffic Engineer determines that the work is not complete and that 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 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 Traffic Engineer at (847) 362-3950 a minimum of seven (7) working days prior to the time of the requested inspection. LCDOT will not grant a field inspection until the Contractor provides notification that the equipment has been field tested, and the intersection is operating according to contract requirements. The LCDOT facsimile number is (847) 362-5290.

Signal indications being tested shall match the lane configurations and markings at the intersection. If any conflicting signal indications are visible to motorist or pedestrians while testing, the Contractor shall be responsible to provide police officer(s) to direct traffic. In addition, 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 properly and that all work has been completed in accordance with the contract and to the satisfaction of the Traffic Engineer, the Traffic 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 reassume the traffic signal maintenance upon successful completion of this inspection.

The Lake County Division of Transportation requires the following from the Contractor at Traffic Signal "turn-ons":

1. One (1) set of signal plans of record.
2. Notification from the Contractor and the equipment vendor that the equipment was satisfactorily field-tested.
3. A knowledgeable representative of the controller equipment supplier shall be present at the traffic signal "turn-on". The representative shall be knowledgeable concerning the cabinet design and the controller functions.
4. A copy of the approved material letter.
5. One (1) copy of the operation and service manuals for the signal controller and the associated control equipment.
6. Five (5) copies (11" x 17") of the cabinet wiring diagrams.
7. Five (5) copies of the traffic signal installation cable log.

Acceptance of the traffic signal equipment by LCDOT shall be based on the inspection results at the traffic signal "turn-on". If approved, the traffic signal acceptance shall be given verbally at the "turn-on" inspection, followed by written correspondence from the Traffic Engineer. The Contractor shall be responsible for all traffic signal equipment and associated maintenance thereof until LCDOT acceptance is granted. Any "punch list" work remaining after the installation is accepted shall be completed within thirty (30) calendar days of the acceptance date. If this work is not completed

within thirty days, LCDOT reserves the right to have the work completed by others at the Contractor's expense. This cost will be in addition to Liquidated Damages for Untimely Work.

The Contractor shall furnish all equipment and/or parts to keep the traffic signal installation operating.

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 will be subject to removal and disposal at the Contractor's expense.

#### **LIQUIDATED DAMAGES FOR UNTIMELY WORK**

A primary concern of LCDOT is to maintain a safe and efficient roadway for the public. Therefore, the Contractor shall proceed with the traffic signal work as soon as conditions and project staging permit. If in the opinion of the Engineer construction conditions are suitable for traffic signal work, and the Contractor has not yet begun the traffic signal work, the Engineer shall notify the Contractor to proceed. The Contractor shall begin the traffic signal work within seven (7) calendar days after notification to proceed. The Contractor shall continue to prosecute the traffic signal work until completion, or until he can no longer proceed due to conditions beyond his control. The Contractor shall notify the Engineer of any conditions impeding and/or delaying his prosecution of the work. Failure by the Contractor to proceed with the traffic signal work as specified herein shall result in liquidated damages of **\$500.00** per calendar day per occurrence.

#### **LOCATING UNDERGROUND FACILITIES.**

Revise Section 803 of the Standard Specifications to read:

Contractor requests for equipment locates will be granted only once prior to the start of the contract. Additional requests shall be at the expense of the Contractor. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any item(s) damaged during the construction, at his/her own expense.

Locate requests should be directed to LCDOT's Traffic Signal Maintenance Contractor or to the LCDOT Traffic Engineering Department at (847) 362-3950.

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 call J.U.L.I.E. at **1-800-892-0123**. For the locations of some utilities, other Agencies or Municipalities may need to be contacted.

#### **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 1 Standard Traffic Signal Design Details" and applicable portions of the Specifications.

#### **Materials.**

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

- b. Enclosures. All electrical service enclosures shall be UL 50, single door design, fabricated from Type 5052 H-32 aluminum. All seams shall be continuous welded and ground smooth, and the cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. Enclosures shall meet the following additional requirements:
1. Pole Mounted Cabinet. The cabinet shall be NEMA Type 4X. 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. A minimum size of 14-inches high, 9-inches wide and 8-inches deep is required. The cabinet shall be channel mounted to a wooden utility pole using assemblies recommended by the manufacturer.
  2. Ground Mounted Cabinet. The cabinet shall be NEMA Type 3R with back panel. The cabinet frame and door shall be 0.125-inch thick, the top 0.250-inch thick, and the bottom 0.500-inch thick. 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 thick hinge bolted to the cabinet with stainless steel carriage bolts and nylock nuts. The locking mechanism shall be slam-latch type with a keyhole cover. A minimum size of 40-inches high, 16-inches wide, and 15-inches deep 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>\leq 5</math>n seconds and operate within a range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . 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, 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 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 in length, and 3/4-inch 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 grounding conduit, ground rod, and pole mount assembly. Any changes 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.**

Revise Section 807 of the Standard Specifications to read:

**General.** All traffic signal systems, equipment and appurtenances shall be properly grounded in strict conformance with the NEC. See IDOT District 1 Traffic Signal detail plan sheet for additional information.

The grounding electrode system shall include a ground rod installed in all foundations, intersection handholes, and the service installation. An additional ground rod will be required at locations where measured resistance to ground exceeds 25 ohms. Ground rods are included in the associated pay items and will not be paid for separately. Testing shall be according to Article 801.11.

- 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 801.14 of the Standard Specifications.
- 1) Equipment grounding conductors shall be XLP insulated No. 6, unless otherwise noted on the plans, and bonded to the grounded conductor (neutral conductor) only at the electric service installation. The Earth shall not be used as the equipment-grounding conductor, and no splices shall be allowed in the cable between ground rods. The equipment-grounding conductor is paid for separately.
  - 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. 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, with the following exceptions: 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.
- 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.

**CONDUIT IN GROUND.**

The conduit shall meet the requirements of Section 810 of the "Standard Specifications," except for the following:

Delete Article 810.01 of the Standard Specifications and add the following:

Description. This item shall consist of furnishing and installing galvanized steel conduit, fittings and accessories in the ground, either pushed, trenched, plowed, or directionally bored, with fittings complete as specified herein and as shown on the Contract drawings.

Add the following to Article 810.03 of the Standard Specifications:

Pavement, driveways, and curbs shall not be removed to install electrical conduits. All buried conduits shall be placed at a minimum depth of 30 inches, except under railroad tracks, where the minimum depth shall be five (5) feet, as measured from the final surface grade to the top of the conduit. All conduit couplings shall be threaded. Conduits terminating in junction and pull boxes shall be terminated with hubs.

When empty conduit is installed for future traffic signal interconnects(s), the Contractor shall provide a pull line within the conduit.

Revise Article 810.05 of the Standard Specifications to read:

Basis of Payment: This work will be paid for at the contract unit price per foot for CONDUIT IN GROUND of the type and size specified, which price shall be payment in full for furnishing and installing the conduit either pushed, trenched, plowed, or directionally bored with fittings, complete. Trenching, backfilling and area restoration are incidental to the cost of this item.

**HANDHOLES.**

Add the following to Section 814 of the Standard Specifications:

All handholes shall be cast-in-place concrete, with a minimum inside dimension of 21-1/2 inches. Frames and lid openings shall match this dimension. The minimum wall thickness for heavy-duty hand holes shall be 12 inches. The handhole cover shall be labeled "Traffic Signals" with legible raised letters.

All conduits shall enter the handhole at a minimum depth of thirty (30) inches. However, the depth of conduit from detector loops located less than five (5) feet from the handhole may be less than thirty (30) inches.

All cable hooks shall be hot-dipped galvanized in accordance with AASHTO Specification M111. Hooks shall be a minimum of 3/8-inch diameter and extend into the handhole at least 6 inches. Hooks shall be placed a minimum of 12 inches below the lid, or lower if additional space is required. All cable hooks shall be secured with a retaining nut tightened against the handhole concrete.

**GROUNDING 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:

Unless otherwise noted on the Plans, the system grounding cable shall be one conductor, #6 gauge copper, with an XLP jacket.

The system grounding cable shall be bonded, using a Listed grounding connector (Burdny type KC/K2C, as applicable, or approved equal), to all new and existing traffic signal mast arm poles and traffic/pedestrian signal posts, including push button posts.

Revise Article 817.05 of the Standard Specifications to read:

Basis of Payment. Payment shall be at the Contract unit price, per foot, for ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6, 1C, which price includes all associated labor and material including grounding clamps, splicing, exothermic welds/other Listed connectors and hardware.

**RAILROAD INTERCONNECT CABLE.**

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

Add the following to Article 817.02 of the Standard Specifications:



The cable shall be three conductor standard #14 copper cable in a clear polyester binder, shielded with #36 AWG tinned copper braid with 85% coverage, and insulated with .016 inch polyethylene (black, blue, red). The jacket shall be black 0.045 PVC or polyethylene.

Revise Article 817.05 of the Standard Specifications to read:

Basis of Payment. This work shall be paid for at the contract unit price per foot 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 Contractor shall not be required to pay the energy charges for the operation of the existing traffic signal installation. 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 electricians on staff 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, telephone service installations, communication cables and conduits to adjacent intersections.

The maintenance shall be according to Article 802.07 of the Standard Specifications, 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 the emergency vehicle pre-emption system. 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 (2) 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 at least 2 STOP signs (R1-1-36) at each approach of the intersection as a temporary means of regulating traffic. At approaches where a yellow flashing indication is necessary, as directed by the Engineer, STOP signs will not be required. The Contractor shall furnish and equip all their signal maintenance vehicles 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 those which may be damaged or stolen.

The Contractor shall provide the Engineer with a 24-hour telephone number for traffic signal maintenance. The Contractor, or his representative, shall be available on a 24-hour basis to respond to emergency calls by the Traffic Engineer or other parties.

Traffic signal equipment which is lost or not returned to the County 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 County 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 County. 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 County's Traffic Signal Maintenance Contractor perform the maintenance work required. The County's Traffic Signal 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 County's Traffic Signal 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 Section 857 of the Standard Specifications:

The controller shall be the latest model available that is compatible with "Zone Monitor IV" or "Aries" software, currently in use by LCDOT, and shall be NEMA TS2 Type 1 compatible, unless specified otherwise on the plans. Only controllers supplied by approved District 1 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 circular yellow and yellow arrow indications.

**INTERSECTION MONITOR MODULE**

This item shall consist of furnishing and installing an Intersection Monitor Module in a traffic signal controller. The module shall be manufactured by the same manufacturer as the traffic signal controller. This module is necessary at isolated (non-interconnected) traffic signals in order to monitor the intersection and controller operations.

Basis of Payment: This item will be paid for at the contract unit price each for INTERSECTION MONITOR MODULE, which price shall be payment in full for furnishing and installing the monitor module complete with all necessary connections and equipment for proper operations.

**MASTER CONTROLLER.**

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

The Master Controller shall be the latest model available that is compatible with "Zone Monitor IV" or "Aries" software, currently in use by LCDOT. The minimum baud rate for fiber optic interconnected signal systems shall be 9600 bps.

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

The cabinet shall be provided with a Siecor CAC 3000, or equivalent, 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. The CAC 3000 shall be equipped with a standard Three-Electrode Heavy Duty Gas Tube Surge Arrestor.

The cabinet shall be equipped with a US robotics modem, minimum 33.6K baud rate or approved equal.

**FIBER OPTIC CABLE.**

Revise Section 871 of the Standard Specifications to read:

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 fibers specified.

The control cabinet distribution enclosure shall be 3M Model 8173 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 feet of slack cable shall be provided for the controller cabinet. The controller cabinet slack cable 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 per foot for FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F, for the cable in place, including distribution enclosure and all connectors.

**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, an XLP black insulated copper cable No. 14 shall be pulled in the same conduit as the fiber optic cable. 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. In order to minimize the number of splices required, the tracer cable shall incorporate maximum lengths of cable supplied by the manufacturer. Splicing of the tracer cable will be allowed at the handholes only. 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. Blowtorches or other devices which oxidize copper cable shall not be allowed for soldering operations. The splice shall be covered with underwater grade WCSMW 30/100 heat shrink tube, minimum length four (4) inches and with a minimum one (1) inch coverage

over the XLP insulation.

Revise Article 817.05 of the Standard Specifications to read:

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

**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 1 Standards Traffic Signal Design Details". All Type A foundations shall be a minimum depth of forty-eight (48) inches.

Concrete Foundations, Type "D" for Traffic Signal Cabinets shall be constructed a minimum of forty-eight (48) inches long by thirty-one (31) inches wide, and shall have a minimum depth of forty-eight (48) inches. The concrete apron at the signal cabinet shall be constructed to 36 inches by 48 inches by 5 inches. Anchor bolts shall be provided and spaced according to the cabinet manufacturer's specifications.

Concrete Foundations, Type "E" for Mast Arm and Combination Mast Arm Poles shall meet the following requirements:

**DESIGN TABLE FOR 30-INCH DIAMETER FOUNDATION  
 FOR ALL MAST ARMS 14 FEET TO 55 FEET, AND ALL COMBINATION POLES  
 (DESIGN DEPTH FOR ALL TYPE "E" FOUNDATIONS IS 15 FEET)**

	TYPE OF SOIL DESCRIPTION	STANDARDS	DESIGN DEPTH OF FOUNDATION
1	SOFT CLAY	Qu = 0.25 to 0.5 ton/ft <sup>2</sup>	17 ft. - 6 in.
2	MEDIUM CLAY	Qu = 0.5 to 1.0 ton/ft <sup>2</sup>	12 ft. - 6 in.
3	STIFF CLAY	Qu = 1.0 to 2.0 ton/ft <sup>2</sup>	8 ft. - 6 in.
*4	LOOSE SAND	N= 4-10	10 ft. - 0 in.
*5	MEDIUM SAND	N=10-30	9 ft. - 0 in.
*6	DENSE SAND	N=30-50	8 ft. - 0 in.

\*WATER TABLE ASSUMED BELOW DEPTHS SPECIFIED

N = Number of blows per foot, Standard Penetration Test

Qu = Unconfined compressive strength, in ton/ft<sup>2</sup>.

The Resident Engineer shall approve the proposed depth of the foundation prior to placing any concrete. Foundations used for Roadway Lighting shall provide an extra 2½" duct.

**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 Engineer shall mark the location of the proposed loops and contact the Traffic Engineer (847) 362-3950 to inspect and approve the layout. When preformed detector loops are installed, the Contractor shall have them inspected and approved prior to the placement of the concrete surface, using the same notification process as above.

Loop detectors shall be installed according to the requirements of the "District 1 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 in order to minimize the length of the saw cut (homerun), unless otherwise directed by the Engineer or as shown on the plans. Polyethylene unit duct shall be used for detector loop raceways to the handholes. Unit duct shall meet the requirements of NEC Article 343. All unit duct used for traffic signal loop detector runs shall be incidental to the price of the detector loop.

The detector loop cable insulation shall be labeled with the cable specifications. Each detector loop lead-in wire shall be labeled in the handhole using a Panduit 250W175C waterproof tag or approved equal. The tag will be secured to each wire with nylon ties.

The resistance to ground for new detector loops shall be a minimum of 500 megaohms under any conditions of weather or moisture. Inductance shall be more than 50 microhenries and less than 700 microhenries. Quality readings shall be more than 5. All new or replacement lead-in cables shall be connected to the loop interface panel using appropriate crimp-on, spade type connectors.

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 incidental to the price of the detector loop. Unit duct, trench and backfill, and drilling of pavement or handholes shall be incidental to detector loop quantities.

The location of each dive hole shall be marked on the face of the curb, the edge of pavement or the handhole, with a saw cut 1/4 inch deep by 4 inches long.

- (a) Type I: Each detector loop, which is to be installed in new asphalt pavement, must be placed in the pavement below the surface course. Each detector loop, which is to be installed in an existing asphalt or concrete pavement, shall be located to miss existing pavement cracks, if possible. Loop sealant used to seal new loops shall consist of a two-component thixotropic, chemically-cured polyurethane. The sealant will be Chemque Q-Seal 295, Perol Elastic Cement A/C Grade or an approved equal. The sealant shall be installed 1/8 inch below the pavement surface. Excess sealant, which accumulates on the surface, shall be removed immediately. Loop sealant used to reseal existing loops shall be composed of an asphalt-based compound. The sealant will be Doseal 230 or an approved equal.
- (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 and shall be placed in the substrate. Loop lead-ins shall be protected to the

satisfaction of the Engineer.

Handholes shall be placed next to the shoulder or back of curb when preformed detector loops enter 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 1 1/16-inch outside diameter (minimum), 3/8-inch inside diameter (minimum) Class A oil resistant synthetic cord-reinforced hydraulic hose with 250 psi 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.

To minimize the length of time that a signal operates without vehicle detection, detector loops for active traffic signal installations shall be installed in a timely manner as follows:

If in the opinion of the Engineer construction conditions are suitable for loop installation(s), the Engineer shall notify the Contractor to proceed. The detector loops shall be installed and fully operational within fourteen (14) calendar days following notification to proceed by the Engineer. This 14-day period shall be in effect throughout the entire year, including the off season, regardless of the Contractor's working day status. Failure by the Contractor to complete the loop installation(s) within the specified timeframe shall result in liquidated damages in the amount of \$500.00 per calendar day, per occurrence.

Basis of Payment. This work shall be paid for at the contract unit price per foot 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:

If not marked in the Contract plans, 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 of the latest type manufactured and must be completely compatible with all components of signal equipment currently in use by the County.

All new installations shall be equipped with confirmation beacons as shown on the District 1 "Standard Traffic Signal Design Details". The confirmation beacon shall consist of a 150 watt Par 38

flood lamp for each direction of preemption. 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 to prevent chafing of wires. In order to maintain uniformity between communities, the confirmation beacons shall indicate when the control equipment receives the preemption signal. The preemption movement shall be signalized by a flashing indication at the rate specified by Section 4K.01 of "MUTCD". The stopped preempted movements shall be signalized by a continuous indication.

All light operated systems shall operate at a uniform rate of 14.035 hz  $\pm$  0.002 hz, or as otherwise required by the Traffic Engineer, and provide compatible operation with other light systems currently being operated in the County.

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 incidental to the cost of the Light Detector. The light 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.

#### **TEMPORARY TRAFFIC SIGNAL INSTALLATION**

Revise Section 890 of the Standard Specifications to read:

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 Electrical Systems" specification) A representative of the approved control equipment vendor shall be present at the temporary traffic signal turn-on inspection.

Only controllers compatible with "Zone Monitor IV" or "Aries" software, currently in use by LCDOT, 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, installed in NEMA TS-1 or TS-2 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 bridge signal controller shall be capable of providing an adjustable all red clearance setting of up to 30 seconds in length. All controllers used for temporary traffic signals shall meet or exceed the requirements of Section 857 of the Standard Specifications with regards to internal time base coordination and preemption.

All 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 diameter holes to run the electric cables through. The 4-inch diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.

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 the District 1 Traffic Signal Specifications for "Grounding of Traffic Signal Systems".

All traffic signal head sections shall be twelve (12) inches. The temporary traffic signal heads shall be placed as indicated on the temporary traffic signal plan or as directed by the Traffic Engineer. The Contractor shall furnish enough cable slack 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.

For temporary traffic signal installations within closed loop system(s), the controller shall be compatible with the existing traffic signal system master controller. The existing system interconnect is to be maintained as part of the Temporary Traffic Signal Installation specified 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 shall be incidental to the item TEMPORARY TRAFFIC SIGNAL INSTALLATION.

All emergency vehicle priority 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 priority equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of signal equipment currently in use by the County. All light operated systems shall operate at a uniform rate of 14.035 hz  $\pm$ 0.002, or as otherwise required by the Engineer. All labor and material required to install and maintain the Emergency Vehicle Priority system shall be incidental to the item Temporary Traffic Signal Installation.

All temporary traffic signal installations shall have approved vehicular detection and approved pedestrian push buttons installed as shown on the plans or as directed by the Engineer. Minor cross streets shall have vehicular detection provided by microwave vehicle sensors or video vehicle detection as shown on the plans or as directed by the Engineer. The Contractor shall install, wire, and adjust the alignment of the vehicular detection system in accordance with the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the vehicular 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 the vehicular detection system. 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 up the wood pole, unless otherwise shown on

the plans. Unit duct shall meet the requirements of NEC Article 343. All unit duct used for traffic signal loop detector runs shall be incidental to the price of the detector loop.

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 assemblies and posts are specified for the permanent signals, the signs shall be relocated to the new equipment at no extra cost.

The Contractor shall not be required to pay the energy charges for the operation of the existing traffic signal installation. If the installation replaces an existing signal, the Contractor shall not be required to pay the energy charges for the operation of the temporary traffic signal. The Contractor shall pay the energy charges for all other temporary traffic signal installations.

The Contractor shall furnish all control equipment for the temporary traffic signals(s) unless otherwise stated in the plans. On projects with multiple temporary traffic signal installations, all controllers shall be of the same manufacturer and model number with current software installed.

Maintenance shall meet the requirements of the "Standard Specifications" and District 1 Specifications for "Maintenance of Existing Traffic Signal Installation". Maintenance of temporary signals and of the existing signals shall be incidental 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 any portion of the project. Maintenance responsibility of the existing signals shall be incidental to the item TEMPORARY TRAFFIC SIGNAL INSTALLATION. 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 contact the Traffic Engineer (847) 362-3950 to request an inspection of the installation(s).

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, on temporary wood poles (Class 5 or better) of 45 feet 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. All approaches for temporary traffic signals for bridge projects shall have microwave vehicle sensors or video vehicle detection, as shown on the plans or as approved by the Engineer.

**Basis of Payment:** This work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL INSTALLATION which shall include all costs for the installation, modification, maintenance, and complete removal of the temporary traffic signal. The price shall include microwave vehicle sensors, video vehicle detection system, modifications/adjustments required for traffic staging, changes in signal phasing as required in the Contract plans, and all material required to complete the work.

**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 will become the property of the Contractor, shall be disposed of by the Contractor outside the right-of-way at his/her own expense.

The Contractor shall safely store and arrange for delivery of all equipment that will remain the property of LCDOT. The Contractor shall deliver, unload and stack the equipment at the owner's facility, as directed by the Engineer, within 30 days of removing it from the traffic signal installation. The Contractor shall provide three (3) copies of a list of equipment that is to remain the property of LCDOT including model and serial numbers where applicable. The Contractor shall also provide a copy of the contract plan or special provisions showing the quantities and type of equipment to be delivered. 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. The Contractor shall be responsible for the condition of the traffic signal equipment from the time of removal until the acceptance of a receipt written by the owner indicating that the items have been returned in good condition.

Traffic signal equipment which is lost or not returned to the County for any reason shall be replaced with new equipment meeting the requirements of these Specifications.

**PEDESTRIAN PUSH-BUTTON.**

Replace Article 1074.02 of the Standard Specifications with the following:

Pedestrian Push-button assembly shall be a Campbell Company 57H Station with a round Progressive Traffic Products "BumbleBee" button, or an approved equal. The push-button assembly shall be installed with a 5-inch by 7¾-inch Campbell Company vandal resistant sign, according to the following:

Where pedestrian signal heads are used, pedestrian signs shall provide the "Push Button for" legend, with the Walking Man symbol and arrow (R10-4b). Where no pedestrian signal heads are used, pedestrian signs shall provide the "Push Button for Green Light" legend with arrow (R10-3 with arrow), or as specified on the plans.

Basis of Payment: This work shall be paid for at the contract unit price each for PEDESTRIAN PUSH BUTTON. The price shall include the station, the button, the sign, the mounting hardware, and all material required to complete the work.

**CONTROLLER CABINET AND PERIPHERAL EQUIPMENT.**

Add the following to Article 1074.03 of the Standard Specifications:

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. Individual load switches shall be provided for each vehicle, pedestrian, and right turn overlap phase.

- Cabinets – Fabricated of 1/8" thick unpainted aluminum alloy 5052-H32. The surface shall be smooth, free of marks and scratches. All external hardware shall be stainless steel.
- Controller Harness – Provide a TS2 Type 2 "A" harness in addition to the TS2 Type 1 harness.
- Surge Protection – EDCO Model 1210 IRS with failure indicator.
- BIU – Containment screw required.
- Transfer Relays – Solid state required.
- Switch Guards – All switches shall be guarded.
- Heating – Two (2) porcelain light receptacles with cage protection controlled by both a wall switch and a thermostat.
- Plan & Wiring Diagrams – 12" x 16" moisture sealed container attached to door.
- Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle pre-emption and sixteen (16) channels of vehicular operation.
- Field Wiring Labels – All field wiring shall be labeled.
- Field Wiring Termination – Approved channel lugs required.
- Power Supply – Provide a nonconductive shield.
- Circuit Breaker – Unless otherwise noted, the circuit breaker shall be rated thirty (30) amps.
- Police Door – Provide wiring and termination for plug-in manual phase advance switch.
- Railroad Pre-Emption Test Switch – Eaton 8830K13 SHA 1250 or approved equivalent.

**TRAFFIC ACTUATED CONTROLLER AND CABINET INTERCONNECTED WITH RAILROADS.**

Add the following to Article 1074.03 of the Standard Specifications to read:

Cabinets shall be NEMA TS2 Type 1 design. In addition to the aforementioned equipment specifications, the following shall apply to railroad interconnected equipment:

Only an approved traffic signal equipment supplier shall assemble railroad interconnected controllers and cabinets. The equipment shall be tested and approved in the equipment supplier's District 1 approved facility prior to field inspection.

The pedestrian clearance during railroad preemption will be limited to a flashing "Don't Walk" interval, equal in length to the vehicle yellow clearance interval, and shall time concurrently with the vehicle yellow clearance.

The terminal facility shall be wired so as to provide supervision of all essential pre-emption components. This wiring shall cause the facility to transfer to or remain in flashing operation in the event any critical component is missing, not connected or failed. Interface relays shall be wired so as to be in the energized state during normal (non-pre-empt) operation. Failure of a relay coil shall open the supervision loop and cause the intersection to transfer to flashing operation. Each critical element such as controller harnesses and interface relays shall be wired to form a series loop which must be complete for normal operation.

A method of supervising the 6-conductor cable interconnecting the traffic and railroad facilities shall provide flashing operation during failed cable conditions. Upon detection of a failed railroad interconnect the controller shall provide one (1) track clearance green interval and shall enter flashing operation at end of track clearance yellow interval. Such flashing operation must be manually reset. The supervision circuit shall, within reason, be capable of detecting failure of the supervision circuit components themselves, and shall provide fail-safe operation immediately upon detecting any failure.

The interconnect to the railroad facility shall be such that demand for pre-emption begins when the railroad flashers begin to flash and ends when railroad gates begin to rise.

An IDOT approved method of controller security shall be implemented to assure data integrity and to preclude changes to critical data. The method shall include a means for the controller to continuously verify the controller/cabinet CRC (cycle redundancy check) match. The CRC will be developed based on preemptor entries, unit data (including phases in use, sequence and ring structure, etc.), overlap assignment and timing, firmware version, and any special memory content necessary for proper operation. Where data is stored in a data module, a spare data module shall be provided to the Engineer.

The controller will provide for immediate track clearance green re-service upon receipt of each subsequent preempt demand. During the re-service all normal vehicle clearance intervals, including red revert, will be respected.

The cabinets shall be equipped with a labeled test switch for the railroad interconnected preemption line which will place a call in the controller's railroad preemption phase and also will acknowledge power to the interconnect line. The switch shall automatically return to normal position upon release.

**UNINTERRUPTIBLE POWER SUPPLY (UPS)**

This specification sets forth the minimum requirements for an uninterruptible power system with battery back-up, for a traffic signal. The system is comprised of the UPS or Inverter unit, bypass switch, batteries, cabinet, and related wiring harnesses.

**UPS (Inverter Unit)**

The UPS shall produce a fully regenerated, conditioned, regulated pure sine wave 120-volt AC (+/- 4%) power output in all operational modes to all traffic control equipment.

The electronic control circuit shall constantly sample the AC input. The UPS shall provide a steady 120v AC from an input source as low as 85 volts and as high as 135volts AC before using the inverter / battery to provide 120 volts to the load.

The switching to battery/inverter will occur in less than 4 milliseconds after utility voltage fluctuations or deviations travel outside preset parameters. The inverter's output shall be pure clean sine wave with an efficiency of 94% at 100% load. The inverter circuit shall be capable of high duty cycle operation.

The UPS shall be rated at Unity power factor (1000 watts) for continuous operation. The UPS shall be capable of providing an overload output rating of 150% of rated output for 10 minutes at Unity power factor (1500 watts).

In case of UPS failure and or battery depletion, the UPS will ensure upon the return of utility power that the utility power will be failsafe-bypassed to the traffic signal controller. An external manual bypass shall provide a secondary redundant path for the utility power if the internal UPS bypass fails. The UPS shall be capable of operating in a bypass mode until the depleted batteries have recharged to a predetermined state, and then resume full on-line operation. The UPS shall be capable of hot swapping the batteries or battery bank, without shutting down the UPS

The UPS Front Panel shall have the following: A/C Input / Output circular connector, battery connector, multi-function dial timer, LCD display for counting power interruptions, real-time voltage meter and amp/watt meter, circular connector containing dry contact closure for UPS Fail, On Battery, Flash, Low Battery, and Alarm. The front panel shall also have LED indicators for AC/Battery power present, UPS Fault, Overload, Low Battery, and Ground Fault.

The UPS shall interface with the traffic signal controller or master controller to provide an alarm indicating battery operation. This alarm must be sent over the normal fiber optic/dial-up communication channels, and must appear as an Aries software Priority One event at the Lake County Division of Transportation facilities

The connector shall be rated for 150 amps DC.

**Bypass Switch**

The Bypass Switch shall consist of one main manual switch, which provides a means of placing the UPS into a bypassed position without interruption of the power to the intersection. A second switch provides a means of isolating the AC utility from the UPS. This provides a means of testing the

UPS/Battery back-up by turning off the AC utility to the UPS with the UPS in normal operation. Both of these switches shall be rated 20 amps at 600 volts.

The Bypass Switch AC connections consist of two circular locking Input/Output connectors, phased to the UPS AC harness. This switch will include an alternate-source input connection, which provides a means of connecting a generator or alternate utility source. The Bypass Switch case shall be constructed of aluminum.

### **Batteries**

This system shall be comprised of four (4) or six (6) 12-volt batteries, as shown on the plans. Batteries shall be Optima Spiral Cell, blue top, deep cycle batteries, with a 55 Ah capacity, or an approved equal. The battery cable shall consist of a quick release connector rated at 150 amps. The connector shall have recessed pins and be polarized to prevent accidental cross connecting of the battery string to the UPS.

### **Cabinet**

The cabinet shall be a California Chassis aluminum cabinet, Part Number FCU104013, with a natural aluminum mill finish, or approved equal.

The external cabinet dimensions shall be 41 inches tall by 25 inches wide by 16 inches deep, excluding the door. The cabinet shall house all batteries, the UPS, the Bypass Switch, and the wiring harnesses.

When installed, the cabinet for the UPS shall rest on the traffic signal cabinet foundation and shall also be secured to the right side of the traffic signal cabinet.

The cabinet shall provide an external connection for an AC generator to power the signals, if necessary, during an extended utility power outage. The external connection shall be a NEMA Style 5-15 male flanged receptacle, and shall be securely covered by a screw-on aluminum plate with a rubber gasket.

Basis of Payment: This item shall be paid for at the contract unit price, each, for furnishing and installing the UNINTERRUPTIBLE POWER SUPPLY (UPS). The price shall include the UPS/Inverter unit, Bypass Switch, Batteries (four or six, according to the plans), Cabinet, wiring harnesses, and all associated equipment and materials necessary for proper operation.

### **CABINET NEATNESS**

The Contractor shall assure that all wiring and peripheral equipment in any new traffic signal cabinet is in a neat and orderly fashion that is acceptable to the Engineer. This applies to controller cabinets, master cabinets, railroad cabinets, communication cabinets, electrical service cabinets, or any other new cabinet called for in the project plans.

All conduit entrances into the cabinet shall be sealed with a pliable waterproof material. Electrical cables inside the cabinet shall be neatly trained along the base and back of the cabinet. Each conductor shall be connected individually to the proper terminal, and the spare conductors shall be bound into a neat bundle. All cables, including those for signals, vehicle detection, pushbuttons, emergency vehicle preemption, video transmission, and communication shall be neatly arranged and bundled within the cabinet to the satisfaction of the Engineer. Each cable shall be marked with an identification number which corresponds to the number and description on the cabinet cable log.

In the case of an existing cabinet that is being modernized or modified, the new cables being installed shall be trained, bundled and labeled to the satisfaction of the Engineer. When working inside an existing cabinet, the Contractor shall minimize disturbance to existing cables and cabinet wiring. Any existing cables and cabinet wiring disturbed by the Contractor shall be re-trained, bundled, and/or labeled to the satisfaction of the Engineer.

The County shall not accept maintenance of the traffic signal installations until the requirements of this specification are satisfied. The cost for this work shall be considered incidental to the cost of the associated pay item.

#### **VENDOR REPRESENTATION**

Under this provision, the Engineer reserves the right to request the equipment vendor be present at the activation of new traffic equipment. Equipment covered under this provision includes signal heads, cabinets, controllers, amplifiers, preemption, video detection/monitoring, communication/transmission, fiber-optic/telemetry, radio, microwave, infra-red, illuminated signs, streetlights, push buttons, lighted crosswalks, uninterruptible power supplies, and any other new equipment being installed and activated.

This provision is in addition to the requirement contained herein that the Contractor provide a representative from the control equipment vendor to attend the traffic signal inspection for both permanent and temporary traffic signal "turn-ons".

Any costs associated with equipment vendor representation shall not be paid for separately, but shall be incidental to the cost of the associated traffic equipment being activated. Any unforeseen costs incurred by the Contractor to provide this representation shall not be the responsibility of the County.

#### **ELECTRIC CABLE**

Delete "or stranded, and No. 12 or" from the last sentence of Article 1076.04 (a) of the Standard Specifications.

The electric service cable shall have an XLP jacket. All other cable jackets shall be polyvinyl chloride, meeting the requirements of IMSA 19-1 or IMSA 20-1. The jacket color for signal cable shall be black. The jacket color for lead-in and communications cable shall be gray. All cabling between the signal cabinet and the signal heads shall be solid copper, not multi-stranded. Heat shrink splices shall be used according to the District 1 "Standard Traffic Signal Design Details".

#### **STEEL MAST ARM ASSEMBLY AND POLE**

##### **STEEL COMBINATION MAST ARM ASSEMBLY AND POLE**

Add the following to Article 1077.03 of the Standard Specifications:

For standardization, the poles for all mast arms and combination mast arms shall be manufactured with an eighteen (18)-inch bolt circle at the foundation base plate, regardless of mast arm length.

Traffic signal mast arms shall be one-piece construction, unless otherwise approved by the Engineer. All mast arms and poles shall be galvanized.

Luminaire arms shall be galvanized steel, truss style, clamp-on, and a minimum fifteen (15) feet in length. Luminaires shall be "cobra head" style, with a minimum mounting height of forty (40) feet.

The base of the mast arm pole shall be protected by a Component Products bolt-on galvanized metal shroud or an approved equal, in lieu of stainless steel screening.

**STEEL MAST ARM ASSEMBLY AND POLE (SPECIAL).**

**STEEL COMBINATION MAST ARM ASSEMBLY AND POLE (SPECIAL).**

Add the following to Article 1077.03 of the Standard Specifications:

For standardization, the poles for all mast arms and combination mast arms shall be manufactured with an eighteen (18)-inch bolt circle at the foundation base plate, regardless of mast arm length. Traffic signal mast arms shall be one-piece construction, unless otherwise approved by the Engineer.

Ornamental bases for mast arm poles shall be either cast iron or cast aluminum. All mast arms, mast arm poles, luminaire arms, cast iron bases, and any exposed steel hardware shall be hot-dipped galvanized, and then painted black by the supplier/manufacturer. Cast aluminum bases shall also be painted black by the supplier/manufacturer.

Luminaire arms shall be steel, truss style, clamp-on, and a minimum fifteen (15) feet in length. Luminaires shall be "cobra head" style and painted black by the supplier/manufacturer. Minimum mounting height for luminaires shall be forty (40) feet.

All (special) steel mast arm assemblies and poles (including combination mast arm assemblies) shall be manufactured and/or supplied by Sternberg Vintage Lighting, or approved equal, according to the following:

- Hamilton Series (6400D) base.
- Round, tapered, 16-sharp fluted pole.
- Round, tapered, smooth, standard-curved, flange-connected, traffic signal mast arm.

**TRAFFIC SIGNAL POST.**

Add the following to Article 1077.01 (d) of the Standard Specifications:

Posts and bases shall be steel and hot-dipped galvanized.

**TRAFFIC SIGNAL POST (SPECIAL).**

Add the following to Article 1077.01 of the Standard Specifications:

All Traffic Signal Posts (Special) shall be sixteen (16) feet in height, extruded aluminum, unless otherwise specified on the plans. All ornamental bases for Traffic Signal Post (Special) shall be cast aluminum.

All Traffic Signal Posts (Special) and associated ornamental bases shall be assembled and painted black at the factory. All exposed steel hardware shall be hot-dipped galvanized, and then painted black.

All Traffic Signal Posts (Special) and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting, or approved equal, according to the following:

- Hamilton Series (5400D) base, approximately forty-three (43) inches tall.
- Round, straight (non-tapered), five (5)-inch diameter, 12-flat fluted post.
- A ball center cap for the top of the post, instead of a tenon.

**SIGNAL HEADS.**

Add the following to Section 1078 of the Standard Specifications to read:

All signal and pedestrian heads shall provide 12-inch displays with glossy black polycarbonate housings. Connecting hardware and mounting brackets shall be black polycarbonate or galvanized steel. A corrosive-resistant, anti-seize lubricant shall be applied to all mounting bracket joints. The lubricant shall be visible to the inspector at the signal turn-on. Post-top mounting collars are required on all posts, and shall be constructed of the same material as the brackets. The bulbs shall be manufactured by Duratest, Sylvania or an approved equal. Signal heads shall be positioned according to the District 1 "Standard Traffic Signal Design Details".

Pedestrian signal heads shall be furnished with the international symbolic "Walking Person" and "Upraised Palm" lenses. Egg crate sun shields are not permitted.

Where specified, pedestrian signal heads with a countdown timer shall consist of two (2) 12-inch by 12-inch modules aligned vertically. The top module of the unit shall be an LED message-bearing surface supplied with overlapping outline "HAND" and "MAN" symbols that comply with the PTCSI standard for these symbols. The bottom module of the unit shall house a LED countdown traffic signal consisting of a two digit numerical display ("00" to "99") a minimum of seven (7) inches in height. The counter shall begin countdown at the beginning of the pedestrian clearance interval as the pictogram of the hand starts flashing. The counter shall execute a countdown of the time, in seconds, of the pedestrian clearance interval synchronized with the controller and ending at (0) at the expiration of the clearance interval. The counter shall be blank at all other times.

The pedestrian signal heads shall be paid for at the contract unit price per each for the type signal head specified. The price shall be payment in full for furnishing and installing the pedestrian signal head complete.

**SIGNAL HEAD, BACKPLATE.**

Replace the first sentence of Article 1078.03 of the Standard Specifications with "All backplates shall be aluminum" and louvered".

**INDUCTIVE LOOP DETECTOR**

Add the following to Article 1079.01 of the Standard Specifications:

Contracts requiring new traffic signal cabinets shall provide rack-mounted detector amplifiers. The detector amplifier shall have a liquid crystal display to view all detector operation, loop diagnostics, loop frequency, inductance, change of inductance readings, and programmable features.

**ILLUMINATED SIGN, LIGHT EMITTING DIODE.**

This work shall consist of furnishing and installing an illuminated sign with light emitting diodes.

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.



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.

The message shall be clearly legible and highly visible, under any lighting conditions, within a 15-degree cone centered about the optic axis. The sign face shall be 24 inches by 24 inches. The sign face shall be completely illegible when not illuminated. No symbol shall be seen under any ambient light condition when not illuminated.

All LEDs shall be T-1 ¼ 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).

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.

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.

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, LED.

#### **LED INTERNALLY ILLUMINATED STREET NAME SIGN**

This work shall consist of furnishing a street name sign which is internally illuminated with light emitting diodes, and installing the sign on a traffic signal mast arm or span wire.

The LED internally illuminated street name sign shall be as manufactured by Traffic Signs, Inc., Model TSI\*-LC-LED (where \* is the length of the sign in inches) or Carmanah Technologies, Inc., Model R409, or approved equal. The sign shall also meet the following:

The sign fixture shall be designed and constructed to prevent deformation or failure when subject to 70 mph wind loads in conformance with the requirements of the AASHTO publication "Standard Specifications for Structural Supports of Highway Signs, Luminaires and Traffic Signals", and all associated updated amendments. All materials used in fabrication shall be new. All materials furnished by the Manufacturer/Vendor/Contractor shall be in accordance with the National Electrical Code (NEC). Signs shall have double sided message unless otherwise specified. The Manufacturer/Vendor shall supply shop drawings of the fixtures, sign, sign message and mounting hardware.

The sign shall be mounted to a rigid mast arm or span wire, as shown on the plans. Unless otherwise shown on the plans all fasteners, screws, nuts, bolts and hardware in or on the fixture

shall be stainless steel type 302 or 305.

All wiring connections within the sign fixture shall terminate through a UL approved junction box. All conductors inside the sign fixture and on the load side of the power source shall be UL listed appliance material (AWM) stranded copper wire with thermoplastic insulation.

All printed circuit boards shall be conformally coated for moisture resistance. The sign shall incorporate over-current protection through the use of an in-line fuse. The fuse rating and type shall be appropriate for varying size and power configurations.

The sign shall be activated by a photocell installed and mounted at the bottom of the sign to prevent false triggering or by a photocell mounted on a luminaire located on the same mast arm assembly and pole as the sign.

Basis of Payment: This work will be paid for at the contract unit price each for furnishing and installing LED INTERNALLY ILLUMINATED STREET NAME SIGN, complete in place, to the satisfaction of the engineer.

#### **RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM**

This work shall consist of providing a revised Signal Coordination and Timing (SCAT) Report and implementing optimized timings to an existing previously optimized closed loop traffic signal system. This work is required due to the addition of a signalized intersection to an existing system or a modification of an existing signalized intersection which affects the quality of an existing system's operation. **MAINTENANCE OF THE SUBJECT INTERSECTION SHALL NOT BE TRANSFERRED TO THE COUNTY UNTIL THIS WORK IS COMPLETED AND ACCEPTED.**

After the new signalized intersection is added or the existing signal is modified, the traffic signal system shall be re-optimized by an approved consultant. The Contractor shall contact the County Traffic Engineer at (847) 362-3950 for a listing of approved consultants.

A listing of existing signal equipment, interconnect information and existing phasing/timing patterns may be obtained from the Lake County Traffic Engineering Department, if available and as appropriate. The consultant shall consult with the County Traffic 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 re-optimization.

Traffic counts shall be taken at the subject intersection no sooner than 30 days after the traffic signals are approved for operation by the County Traffic Engineer. Seven day/twenty-four hour automatic traffic recorder counts will be required and 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 typical weekday from midday Monday to midday Friday, and if necessary, on the weekend. Additional manual turning movement counts may be necessary if heavy traffic flows exist during off peak hours. The turning movement counts shall identify cars, heavy vehicles, buses, and pedestrian movements.

A Capacity Analysis shall be conducted at the subject intersection to determine its level of service and degree of saturation. 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 with minor adjustments if necessary. Changes to the cycle lengths and offsets for the entire system may be

required due to the addition/modification of the subject intersection. Both volume and occupancy shall be considered when developing the re-optimized timing program. Signal system optimization analyses shall be conducted utilizing SYNCHRO, PASSER II, TRANSYT 7F, SIGNAL 2000 or other appropriate approved computer software.

If the system is being re-optimized due to the addition of a signalized intersection, all the intersections shall be re-addressed according to the current standard of District One. The proposed signal timing plan shall be forwarded to LCDOT for review prior to implementation. The timing plan shall include a traffic responsive program and a time-of-day program which may be used as a back-up system. After downloading the system timings, the consultant shall make fine tuning adjustments to the timing in the field to alleviate observed adverse operating conditions and to enhance signal coordination.

The consultant shall furnish to LCDOT an original and two copies of the revised SCAT Report for the re-optimized system. The report shall contain the following: turning movement and automatic traffic recorder counts, capacity analyses for each count period, computer optimization analysis for each count period, proposed implementation plans and summaries including system description, analysis methodology, method of effectiveness comparison results and special recommendations and/or observations. Copies of the entire database including intersection displays and zone displays shall be furnished to LCDOT.

Basis of Payment: This work shall be paid for at the contract unit price per lump sum for RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM, which price shall be payment in full for performing all work described herein.

#### **SIGNAL HEAD, LIGHT EMITTING DIODE.**

##### **a) General:**

- 1) Signal Head, Light Emitting Diode (LED), 1 Face, (All Section Quantities), (All Mounting Types) shall meet 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, 2002, with the following modifications:
- 2) All signal and pedestrian heads shall provide 12-inch displays with glossy black polycarbonate housings. Connecting hardware and mounting brackets shall be polycarbonate (black) or galvanized. A corrosive 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.
- 3) The optical unit of all traffic signal and pedestrian head sections shall be light emitting diodes (LEDs) instead of incandescent bulbs. Each signal head shall conform fully to the "Interim Purchase Specification of the Institute of Transportation Engineers (ITE) for LED Vehicle Traffic Signal Modules" published July, 1998, or applicable successor ITE specification.
- 4) The lens of each signal indication 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 applied to provide abrasion resistance.
- 5) Each pedestrian signal LED module shall provide the ability to actuate the outlined upraised hand and the outlined walking person on one 12-inch section. Two (2) 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. "Egg Crate" type sun shields are not permitted. All figures must be a minimum of 9 inches in height and easily identified from a distance of 120 feet.
- 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) In the event of a power outage, light output from the LED modules shall cease instantaneously.
  - 8) In addition to conforming with the requirements for circular LED signal modules, LED arrow indication modules shall meet existing specifications stated in the ITE Standard: "Vehicle Traffic Control Signal Heads," section 9.01. 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. The LEDs shall be spread evenly across the illuminated portion of the arrow area.
  - 9) 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 Section 4.1.1 of the Interim Purchase Specification of the ITE for LED Vehicle Traffic Signal Modules within the first 36 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 County.
  - 10) 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.
  - 11) The LEDs utilized in the modules shall be AlInGaP technology for red, yellow, Portland orange and white 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.
  - 12) 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.
- b) Electrical:
- 1) Maximum power consumption for LED modules is per Table 1.
  - 2) LED modules will have EPA Energy Star compliance ratings, if applicable to that shape, size and color.
  - 3) The modules shall operate from a 60 HZ  $\pm$ 3 HZ AC line over a voltage ranging from 95 volts to 135 volts. The fluctuations of line voltage shall have no visible effect on the luminous intensity of the indications.
  - 4) Operating voltage of the modules shall be 120 VAC. All parameters shall be measured at this voltage.
  - 5) The LED signal module shall have a power factor of 0.90 or greater.
  - 6) Total harmonic distortion (current and voltage) induced into an AC power line by a LED signal module shall not exceed 20 percent.
  - 7) The signal module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients as stated in Section 2.1.6 of NEMA Standard TS-2, 1992.
  - 8) The LED circuitry shall prevent perceptible flicker to the unaided eye over the voltage range specified above.
  - 9) All wiring and terminal blocks shall meet the requirements of Section 13.02 of the ITE Publication: Equipment and Material Standards, Chapter 2 (Vehicle Traffic Control Signal Heads).
  - 10) The modules shall be operationally compatible with currently used controller assemblies (solid state load switches, flashers, and conflict monitors).
  - 11) When a current of 20 mA AC (or less) is applied to the unit, the voltage reading across the two leads shall be 15 VAC or less.
  - 12) The modules and associated on-board circuitry must meet Class A emission limits referred in Federal Communications Commission (FCC) Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise.

c) Photometric Requirements:

- 1) The minimum initial luminous intensity values for the modules shall be as stated in Table 2 and/or Table 4 at 25°C.
  - 2) The modules shall meet or exceed the illumination values as shown in Table 3 and/or Table 4, 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 Table 5, throughout the useful life over the operating temperature range.
- d) Environmental Requirements:
- 1) The LED signal module shall be rated for use in the operating temperature range of -40°C (-40°F) to +74°C (+165°F). The modules shall meet all specifications throughout this range.
  - 2) The LED signal module shall be protected against dust and moisture intrusion per the requirements of NEMA Standard 250-1991 for Type 4 enclosures to protect all internal components.
- e) Construction:
- 1) The LED signal module shall be a single, self-contained device, not requiring on-site assembly for installation. The power supply for the module shall be integral to the unit.
  - 2) The circuit board and power supply shall be contained inside the module.
  - 3) The assembly and manufacturing process for the LED signal assembly shall be designed to assure all internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.
- f) Materials:
- 1) Material used for the lens and signal module construction shall conform to ASTM specifications for the materials.
  - 2) Enclosures containing either the power supply or electronic components of the signal module shall be made of UL94VO flame retardant materials. The lens of the signal module is excluded from this requirement.
- g) Traffic Signal and Pedestrian LED Module Identification:
- 1) Each module shall have the manufacturer's name, trademark, model number, serial number, date of manufacture (month-year), and lot number as identification permanently marked on the back of the module.
  - 2) The following operating characteristics shall be permanently marked on the back of the module: rated voltage and rated power in Watts and Volt-Ampere.
  - 3) 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 one inch in diameter. Additionally, the color shall be written out in ½-inch letters next to the symbol.
  - 4) If a specific mounting orientation is required, each module shall have prominent and permanent marking(s) for correct indexing and orientation within a signal housing. The markings shall consist of an up arrow, or the word "UP" or "TOP".
- h) Traffic Signal LED Module:
- 1) Modules can be manufactured under this specification for the following faces:
    - a 12-inch circular, multi-section
    - b 12-inch arrow, multi-section
    - c 12-inch pedestrian, 2 sections
  - 2) The maximum weight of a module shall be four (4) pounds.
  - 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.

i) Retrofit Traffic Signal Module:

All other specifications, including section h) above, apply unless specifically superceded in this section.

- 1) The module shall fit into existing traffic signal section housings built to the specifications detailed in ITE Publication: Equipment and Material Standards, Chapter (Vehicle Traffic Control Signal Heads).
- 2) Each Retrofit module shall be designed to be installed in the doorframe of a standard traffic signal housing. The Retrofit module shall be sealed in the doorframe with a one-piece EPDM (ethylene propylene rubber) gasket.
- 3) The 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.

j) Connection Requirements

Two secured, color coded, 600 V, 20 AWG minimum, jacketed wires, conforming to the National Electric Code, rated for service at +105°C, are to be provided for electrical connection for each LED signal module. Conductors for modules, including Retrofit modules, shall be minimum forty (40) inches long, with quick disconnect terminals attached.

k) Lens:

- 1) The lens of the module shall be tinted and integral to the unit, convex with a smooth outer surface and made of plastic.
- 2) 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.
- 3) The LED signal module lens shall be UV stabilized and shall be capable of withstanding ultraviolet (direct sunlight) exposure for a minimum period of 60 months without exhibiting evidence of deterioration.
- 4) The polymeric lens shall have a surface coating or chemical surface treatment to provide front surface abrasion resistance.

l) 12-inch arrow module:

All other specifications apply unless specifically superceded in this section.

- 1) The arrow module shall meet specifications stated in Section 9.01 of the ITE Publication: Equipment and Material Standards, Chapter 2 (Vehicle Traffic Control Signal Heads) for arrow indications.
- 2) The LEDs shall be spread evenly across the illuminated portion of the arrow area.

m) 12-inch PV module:

All other specifications apply unless specifically superceded in this section.

- 1) The module shall be designed and constructed to be installed in a PV signal housing without modification to the housing.
- 2) The LEDs shall be spread evenly across the module.

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 1 Maximum Power Consumption.(in Watts)

	Red		Yellow		Green	
	25°C	74°C	25°C	74°C	25°C	74°C
12-inch circular	11	17	22	25	15	15
12-inch arrow	9	12	10	12	11	11
	Hand-Portland Orange		Person-White			
Pedestrian Indication	6.2		6.3			

Table 2 Minimum Initial Intensities for Circular Indications (in cd)

Angle(v,h)	12-inch		
	Red	Yellow	Green
2.5, ±2.5	399	798	798
2.5, ±7.5	295	589	589
2.5, ±12.5	166	333	333
2.5, ±17.5	90	181	181
7.5, ±2.5	266	532	532
7.5, ±7.5	238	475	475
7.5, ±12.5	171	342	342
7.5, ±17.	105	209	209
7.5, ±22.5	45	90	90
7.5, ±27.5	19	38	38
12.5, ±2.5	59	119	119
12.5, ±7.5	57	114	114
12.5, ±12.5	52	105	105
12.5, ±17.5	40	81	81
12.5, ±22.5	26	52	52
12.5, ±27.5	19	38	38
17.5, ±2.5	26	52	52
17.5, ±7.5	26	52	52
17.5, ±12.5	26	52	52
17.5, ±17.5	26	52	52
17.5, ±22.5	24	48	48
17.5, ±27.5	19	38	38

Table 3 Maintained Minimum Intensities for Circular Indications (in cd)

Angle(v,h)	12-inch		
	Red	Yellow	Green
2.5, ±2.5	339	678	678
2.5, ±7.5	251	501	501
2.5, ±12.5	141	283	283
2.5, ±17.5	77	154	154
7.5, ±2.5	226	452	452
7.5, ±7.5	202	404	404
7.5, ±12.5	145	291	291
7.5, ±17.5	89	178	178
7.5, ±22.5	38	77	77
7.5, ±27.5	16	32	32
12.5, ±2.5	50	101	101
12.5, ±7.5	48	97	97
12.5, ±12.5	44	89	89
12.5, ±17.5	34	69	69
12.5, ±22.5	22	44	44
12.5, ±27.5	16	32	32
17.5, ±2.5	22	44	44
17.5, ±7.5	22	44	44
17.5, ±12.5	22	44	44
17.5, ±17.5	22	44	44
17.5, ±22.5	20	41	41
17.5, ±27.5	16	32	32

Table 4 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

Table 5 Chromaticity Standards (CIE Chart) Section 8.04 of ITE

Red	Y: not greater than 0.308, or less than 0.998 - x
Yellow	Y: not less than 0.411, nor less than 0.995 - x,
Green	Y: Not less than 0.506 - .519x, nor less than 0.150 + 1.068x, nor more than 0.730 - x

**VIDEO DETECTION SYSTEM, (COMPLETE INTERSECTION)**

This specification sets forth the minimum requirements for a system that monitors vehicles on a roadway via processing of video images and provides detector outputs to a traffic controller or similar device. This work shall consist of furnishing and installing an Autoscope Solo Pro or approved equal video vehicle detection system at one signalized intersection, including all necessary hardware, cable and accessories necessary to complete the installation in accordance with the manufacturer's specifications.

In order for the Traffic Engineer to manipulate detection zones and view the video signal over a fiber optic connection, the video detection system must be fully integrated with the VIDEO TRANSMISSION SYSTEM (SPECIAL):

The system shall consist of integrated machine vision processor sensors (MVPs), an electrical interface panel, and a detector interface card. The quantity of MVP sensors included with this pay item shall be as shown on the plans. The system shall also include a ten-inch color VGA monitor with BNC connector for video input. A simple multi-camera video switching unit shall be provided to



select video input to the monitor. Vehicle detection zones shall be user-defined through interactive graphics by placing lines and/or boxes in an image on a VGA monitor. The system shall calculate traffic parameters in real-time and provide local non-volatile data storage for later downloading and analysis.

### **I. Introduction**

The video vehicle detection system shall be easily configurable and expandable to meet traffic management applications such as intersection control, traffic monitoring, incident management, and traffic data collection. The system shall be composed of the following components:

- A machine vision processor (MVP) sensor that provides vehicle detection, JPEG video compression, and communications with other subsystems.
- Detector Interface Card (Mini-Hub TS-2)
- A Windows-based communications and Windows-based applications software for setup and system configuration as well as any continued monitoring and data collection, if required.
- System communications that shall operate over any appropriate serial communications links provided by the systems integrator.
- An integrated color camera, zoom lens, and machine vision processor all in one unit; direct, real-time iris and shutter speed control; with single-frame, JPEG image compression.
- The system shall also have easily configured IP addressing for the MVP sensor field network.

### **II. MVP Sensor**

The MVP sensor shall combine an integrated high-speed, color imaging CCD array with zoom lens optics, image-processing hardware and a general-purpose CPU bundled into a sealed enclosure. The sensor shall be equipped with a sunshield to reflect solar heat and to shield the CCD array and faceplate from direct exposure to the sun. The sensor shall also be equipped with a faceplate heater to prevent accumulated ice, snow, or condensation from obscuring the view of the camera. The general-purpose CPU shall directly control the optics and camera electronics.

The lens shall be pre-focused at the factory and shall not require field adjustment. The zoom optics shall maintain focus throughout the operating range from 7 to 74 degrees horizontal field of view (5 to 58 degrees vertical field of view). At an operator's request, the MVP sensor shall temporarily switch to surveillance mode operation, which allows the operator to zoom the lens.

The MVP sensor shall provide color analog video output at 30 frames per second, and shall process a minimum of twenty (20) detector zones placed anywhere in the field of view of the sensor. The analog video output shall provide graphics overlay that indicates the current real-time detection state.

#### **MVP Sensor External Interfaces**

The external interfaces to the MVP sensor shall include the following:

##### **Network Communications Port**

There shall be a field network communications port to configure and provide general communications and data retrieval. The MVP sensor shall use a full- or half-duplex, RS-485, 4-wire electrical network to facilitate communications with a Windows computer. This port shall be used to update the embedded software and to interact with applications software for the various detection requests supported by the MVP sensor.

##### **Detector I/O Port**

The MVP sensor detector port shall use a dedicated, RS-485 2-wire, half-duplex interface between the MVP sensor and a detector interface card also known as a detector port master (DPM) (e.g.

Mini-Hub TS2). The real-time state of traffic controller phase inputs shall be transmitted to the MVP sensor. The detector port master interface card shall subsequently translate the detection states to a traffic signal controller.

#### **Differential Video**

The MVP sensor shall output full motion, differential analog video over a single, twisted pair.

#### **Power**

The MVP sensor shall operate on 24 VAC at 50/60 Hz or 24 VDC. The camera and processor electronics and power supply shall consume a maximum of 10 watts. The integrated faceplate heater shall consume a maximum of 5 watts.

#### **MVP Sensor Vehicle Detection Requirements**

The MVP sensor shall be able to be programmed with a variety of detector types which can perform the following functions:

- Presence/passage detection of moving and stopped vehicles.
- Detection based on the direction of travel.
- Measure vehicle speed and length and provide five (5) classes of vehicles based on length.
- Detect incident shock waves using effective detection algorithms.
- Generate alarm status based on the detection of shock waves, wrong-way vehicles, stopped vehicles, red-light runners, or other operator-defined traffic conditions.
- Combine the output of multiple detectors with logical operators and modify the combined state based on delay or extension timers.

#### **Detection Zone Programming**

A VGA monitor shall display the detection zones superimposed on images of traffic scenes. A mouse and keyboard shall be used to place, size, and orient detection zones and edit previously defined detector configurations. It shall also be possible to download detector configurations from the computer to the MVP sensor and upload the current detector configuration that is running in the MVP sensor.

#### **Count Detection Performance**

Using an MVP sensor installed for optimal viewing, the system shall be able to accurately count vehicles with at least 96% accuracy under normal operating conditions (day and night), and at least 93% accuracy under artifact conditions. Artifact conditions are combinations of weather and lighting conditions that result from shadows, fog, rain, snow, etc. The volume count shall be accumulated for all traveled lanes, and accumulated over time intervals that contain a minimum of one hundred (100) vehicles to ensure statistical significance.

#### **Demand Presence Detection Performance**

The system shall be able to accurately provide demand presence detection. The demand presence accuracy shall be based on the ability to enable a protected turning movement on an intersection stop line, when a demand exists. The probability of not detecting a vehicle for demand presence shall be less than 1-percent error under all operating conditions. In the presence of artifact conditions, the MVP sensor shall minimize extraneous (false) protected movement calls to less than 7%.

#### **Speed Detection Performance**

The MVP sensor shall accurately measure average speed of multiple vehicles with more than 98% accuracy under all operating conditions for approaching and receding traffic. The MVP sensor shall accurately measure individual vehicle speeds with more than 95% accuracy under all operating

conditions for vehicles approaching the sensor and 90% accuracy for vehicles receding from the sensor.

#### **MVP Sensor Enclosure**

The MVP sensor and lens assembly shall be housed in an environmental enclosure that provides the following capabilities:

- The enclosure shall be waterproof and dust-tight to NEMA-4 specifications, and shall have the option to be pressurized with dry nitrogen to  $5 \pm 1$  psi.
- The enclosure shall allow the MVP sensor to operate satisfactorily over an ambient temperature range from  $-34$  degrees C to  $+60$  degrees C while exposed to precipitation as well as direct sunlight.
- The enclosure shall allow the image sensor horizon to be rotated during field installation.
- A faceplate heater shall prevent the formation of ice and condensation in cold weather.

#### **MVP Sensor Electrical**

All video connections from the sensor shall be isolated from earth ground. The video output, communication, and power stages of the sensor shall include transient protection to prevent damage to the sensor. The MVP sensor shall meet CE, FCC, and UL requirements for safety and EMI.

#### **Communications Panel Requirements**

The communications interface panel shall provide a terminal block for terminating power, as well as terminations for two twisted-pair wires for network communications to the MVP sensor, one twisted-pair for video output from the MVP sensor, and one twisted-pair for detector port communications. The panel shall also provide two sets of terminations for two twisted-pair wires for a point-to-point field network. The communications interface panel shall also provide transient protection and a DB9 connector for an optional traffic signal controller interface.

#### **III. Detector Interface Card (Mini-Hub TS-2)**

The system shall use a defined communication protocol (detector port protocol) between the MVP sensors and the Mini-Hub TS2. The protocol shall be used to communicate TS1 input pins, TS1 output pins, TS2 detector states, and TS2 phase states. The detector interface card shall be the master of the detector port (DPM) and the MVP sensors shall be the slaves. The DPM shall issue a command for a single or up to eight (8) MVP sensors to respond. The DPM shall exchange input and output state data with the MVP sensor every 100 ms. The DPM interface card shall subsequently translate the detection states to a traffic signal controller. Each input or output pin of an interface card shall have one associated LED output to reflect its input or output state.

#### **IV. Basis of Payment**

This item will be paid for at the contract unit price each for VIDEO DETECTION SYSTEM, (COMPLETE INTERSECTION) which price shall be payment in full for furnishing all associated equipment required, installing the system at one signalized intersection, and placing the system in operation to the satisfaction of the Engineer.

#### **REMOTE-CONTROLLED VIDEO SYSTEM**

This pay item shall include providing and installing a remote-controlled video system at a location designated by the Engineer. The remote-controlled video system shall be a PELCO Spectra II Series Discreet Dome System or approved equal. This pay item shall include a color camera (minimum 16x or 22x optical zoom), dome assembly, all mounting hardware, connectors, cables, and related equipment necessary to complete the installation in accordance with the manufacturer's

specifications.

In order for the Traffic Engineer to control the camera remotely and view the video signal over a fiber optic connection, the REMOTE-CONTROLLED VIDEO SYSTEM must be fully integrated with the VIDEO TRANSMISSION SYSTEM (SPECIAL).

Basis of Payment: This item will be paid for at the contract unit price each for REMOTE-CONTROLLED VIDEO SYSTEM, which price shall be payment in full for furnishing all associated equipment required, installing the system complete and in place, and placing the system in operation to the satisfaction of the Engineer.

### **VIDEO TRANSMISSION SYSTEM (SPECIAL)**

#### **General**

This specification sets forth the minimum requirements for a video transmission system that allows a user at a remote location to receive video output transmitted from multiple cameras via the Lake County fiber optic network.

This pay item consists of installing video transmission equipment in an existing or proposed traffic signal cabinet that will communicate with the Lake County Traffic Management Center. This pay item shall include all components, mounting hardware, connectors, cables, and related equipment necessary to complete the installation in accordance with the manufacturer's specifications.

#### **System Components**

The system shall consist of a hardened layer two Ethernet switch, the required number of analog to digital video encoders as shown in the plans, and a four input video switch.

#### **Hardened Two Layer Ethernet Switch**

This switch shall be a Cisco 2955S-12 or approved equal. The Ethernet switch shall be installed in the traffic signal cabinet and provide twelve 10/100 Ethernet ports and two 100BASE-LX single-mode uplink ports.

#### **Analog to Digital Video Encoder**

The analog to digital video encoder shall be a Cornett CDX-350T or approved equal. This encoder shall encode the video signal as an MPEG-2 digital format and be compatible with a 10/100 Base T Ethernet network. This component shall be rack mounted in the traffic signal cabinet.

#### **Four Input Video Switch**

This video switch shall be a Bosch LTC 2377 or approved equal. The switch shall be able to accept four full color analog video inputs and shall be able to output a quad display video stream.

Basis of Payment: This item will be paid for at the contract unit price each for VIDEO TRANSMISSION SYSTEM (SPECIAL) which price shall be payment in full for furnishing and/or relocating all equipment required, installing the system complete and in place, and placing the system in operation to the satisfaction of the Engineer.

### **ELECTRIC CABLE IN CONDUIT, COAXIAL**

This work shall consist of furnishing and installing a Belden 8281 RG-59U Type Coaxial Cable or approved equal. The cable shall be a 75-ohm coaxial cable with 20 AWG solid bare copper

conductor, tinned copper double-braided shield (96% min), and black polyethylene jacket. The nominal outside diameter shall be 0.304 inches. Amphenol 31-71032 (or equivalent) BNC plug connectors shall be used at both the PTZ camera and traffic signal cabinet ends of the cable. An Amphenol CLT-2 crimping tool is required for the termination. No splices shall be allowed in the cable between the PTZ camera and the traffic signal cabinet.

Basis of Payment: This work will be paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, COAXIAL, which price shall be payment in full for furnishing the material, making all electrical connections and installing the cable complete, measured as specified herein.

**ELECTRIC CABLE IN CONDUIT, COMMUNICATION, NO. 16, 5½ PAIR**

This work shall consist of furnishing and installing a Belden YC46223 communications cable, or approved equal, in existing and/or new conduit. This Belden cable has a color code that matches the MVP cable currently in use by the County. The cable shall consist of 16 AWG stranded bare copper twisted-pair conductors, with PVC insulation, and PVC jacket with nylon ripcord. The nominal outside diameter shall be 0.502-inch.

The communications cable, No. 16, 5½ pair shall be spliced to the MVP Cable in the base of the signal mast arm pole on which the MVP is mounted. The MVP cable shall be provided by the MVP manufacturer. The communications cable shall be provided by the Contractor. The conductors from the two cables shall be spliced using the 3M Scotchlok gel-filled splice tabs (part number 314). Each splice shall be individually protected with shrink tubing. The individual splices shall also be bundled together and protected with shrink tubing. The cost of all work associated with splicing the cables shall be considered incidental to the cost of the communications cable, No. 16, 5½ pair.

Basis of Payment: This work will be paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 16, 5½ PAIR, which price shall be payment in full for furnishing, installing and making all electrical connections necessary for proper operation.

**Special Provision**

**ELECTRIC CABLE IN CONDUIT, VIDEO, NO. 20, 3C**

This work shall consist of furnishing and installing a Belden 9803 Direct Burial multi-conductor cable or an approved equal for the Dome Cameras. The cable shall consist of 20AWG solid tinned copper conductors, polypropylene insulation, aluminum-polyester shield overall with shorting fold and 22 AWG solid tinned copper drain wire. The cable shall have a black high-density polyethylene jacket and a nominal outside diameter of .205 inches. The color code for the cable shall be white, red and black.

Basis of Payment: This work will be paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, VIDEO, NO. 20, 3C which price shall be payment in full for furnishing the material and making all electrical connections and installing the cable complete, measured as specified herein.

## Special Provision

### **EMERGENCY VEHICLE PREEMPTION PUSHBUTTON ASSEMBLY**

This work shall consist of installing an emergency vehicle preemption pushbutton assembly inside Buffalo Grove Fire Station No. 26 as shown on the plans. This pay item shall include two (2) separate pushbuttons inside the fire station.

Before beginning construction, the contractor shall contact Deputy Chief Daniel Pearson at the Buffalo Grove Fire Department at 847-537-0995 to verify the Fire Department's preference for the location of the pushbuttons. Pushbutton "A" will be located inside the fire station garage on the north wall between the garage doors. The pushbutton will be located four feet, eight inches (4'-8") above the ground and fourteen inches (14") east of the west garage door, or as directed by the Buffalo Grove Fire Department. Pushbutton "B" shall be located inside the shift commander's garage, five feet, six inches (5'-6") above the ground and twelve inches (12") to the west of the garage door, or as directed by the Buffalo Grove Fire Department.

A 2" diameter galvanized steel conduit shall be pushed or directional bored to the location outside the fire station where the pushbutton will be located. The conduit shall run up the exterior of the fire station wall to a height of 5'-6" above the ground. At that location, the wall will be drilled to accommodate the 2" conduit to travel inside the fire station. The hole shall be properly grouted. A junction box will be mounted to the inside wall at that location to contain electrical splices and relays for the push-button cabling. Interior conduits two inches (2") in diameter shall be installed from the junction box to the locations of the pushbutton assemblies. Any holes drilled in interior walls to accommodate the conduit work shall be properly grouted. All work shall be performed in accordance with the National Electric Code and local building codes. The conduits may be painted at the request of the Fire Department, so as to be less obtrusive in appearance.

If the area where the driveway pavement is to be removed partially blocks the garage door, steel plates shall be used to cover the area so that Fire Department vehicles may enter and exit the garage. The steel plates will remain in place until the Portland Cement Concrete Driveway Pavement has been replaced and has completely cured.

**Basis of Payment.** The conduit and cable lengths, both horizontal and vertical, between the fire station junction box and the double handhole adjacent to the traffic signal controller will be paid for at the contract unit price per foot for CONDUIT IN GROUND, 2" DIA., GALVANIZED STEEL AND ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C. Driveway pavement removal and replacement shall be paid for at the unit price per square yard for DRIVEWAY PAVEMENT REMOVAL and PORTLAND CEMENT DRIVEWAY PAVEMENT, 8 INCH. All remaining work will be paid for at the contract unit price each for EMERGENCY VEHICLE PREEMPTION PUSHBUTTON ASSEMBLY, which price shall be payment in full for all work and materials described above, including the pushbuttons, conduit, conduit elbows, signal cable, and paint.

**Special Provision**

**FULL-ACTUATED CONTROLLER AND CABINET, SPECIAL**

Effective: January 1, 2002

This work shall consist of furnishing and installing a(n) "Econolite" 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.

Basis of Payment. This work will be paid for at the contract unit price each for FULL-ACTUATED CONTROLLER AND CABINET, SPECIAL of the type specified, which price shall be payment in full for furnishing and installing the controller complete including conflict monitor, load switches and flasher relays, with necessary connections for proper operation.

The type specified will indicate the type of cabinet. For example, FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL.



## **REBUILD EXISTING HANDHOLE**

Effective: January 1, 2002

This item shall consist of rebuilding and bringing to grade a handhole at a location shown on the plans or as directed by the Engineer. The work shall consist of removing the handhole frame and cover and the walls of the handhole to a depth of eight (8) inches below the finished grade.

Upon completion of the above work, four (4) holes, four (4) inches in depth and, one half (1/2) inch in diameter, shall be drilled into the remaining concrete; one hole centered on each of the four handhole walls. Four (4) #3 steel dowels, eight (8) inches in length, shall be furnished and shall be installed in the drilled holes with a masonry epoxy.

All concrete debris shall be removed from State right-of-way to a location approved by the Engineer.

The area adjacent to each side of the handhole shall be excavated to allow forming. All steel hooks, handhole frame, cover, and concrete shall be provided to construct a rebuilt handhole according to applicable portions of Section 814 and Section 1088.10 of the Standard Specifications. (The existing frame and cover shall be replaced if it was damaged during removal or as determined by the Engineer.)

Basis of Payment. This work shall be paid for at the contract unit price each for REBUILD EXISTING HANDHOLE, which price shall be payment in full for all labor, materials, and equipment necessary to complete the work described above and as indicated on the drawings.

**Special Provision**

**TEMPORARY TRAFFIC SIGNAL SYSTEM**

This work consists of installing and maintaining a temporary traffic signal system. Communication with the existing system shall be maintained throughout the duration of construction except when the interconnect cable is being removed and reinstalled.

Wood poles shall be installed at the locations specified on the project plans. The existing fiber optic interconnect cable shall be removed from the existing conduit and reinstalled on the temporary wood poles. The existing interconnect cable shall be supported aurally to the temporary traffic signal controller cabinet. Should additional fiber optic cable be required, all splices are to take place above ground on the wood poles, or as directed by the engineer.

Basis of Payment. All work described above shall be paid for each as "Temporary Traffic Signal System."

Deerfield Parkway STP Improvement  
Section No. 03-00088-00-FP  
Job No.: C-91-266-05  
Project No. M-8003(524)  
Contract No.: 83807

## **LIGHTING SPECIFICATIONS AND SPECIAL PROVISIONS**

## SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for the Road and Bridge Construction", adopted January 1, 2002, (hereinafter referred to as the Standard Specifications); the "Supplemental Specifications and Recurring Special Provisions," adopted January 1, 2003; the latest edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" in effect on the date of the invitation for bids; the "Standard Specifications for Traffic Control Items," latest edition, (hereinafter referred to as the Traffic Specification), and the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 edition. These special provisions included herein apply to and govern the construction, all in Lake County, and in case of conflict with any parts of said specifications, the said special provisions shall take precedence and shall govern.

## GENERAL ELECTRICAL REQUIREMENTS

Effective: March 1, 2003

All electrical work shall be performed in conformance with the Illinois Department of Transportation's Standard Specifications for Road and Bridge Construction, latest edition, including all published Supplemental Specifications, unless and then only to the extent modified below:

Delete the last paragraph of Article 801.06 of the Standard Specifications.

Revise the 7<sup>th</sup> and 8<sup>th</sup> paragraphs of Article 801.08 of the Standard Specifications to read:

Engineer's Stamp. 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 Owner's approval thereof. The Contractor must still be in full compliance with contract and specification requirements.

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 801.12 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 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 801.12 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:

"Splicing of Lighting cables. 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 6.35 mm (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.

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.

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. Work which is extra to the contract will be paid extra. 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 152.4 mm (six 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.

## LIGHT POLE

### Description

This item shall consist of furnishing and installing the light poles as specified herein and shown on the contract drawings. This item shall include all of the internal wiring, fusing, base covers, anchor bolts, mast arm and the hardware required for final attachment to the foundation as shown in the drawings. Single Mast Arm poles shall be provided as detailed on the plans. Comply with Section 830 of IDOT Standard Specifications except as directed below.

### Materials

The pole shall be square tapered steel as detailed on the contract drawings.

The pole shall come complete with a 6'-0" mast arm. Both the pole and the mast arm shall be weathering steel. The pole shaft shall be 7-gauge corten. The pole shall include an internal vibration damper. The pole shaft shall be square in cross section having flat sides, radiused corners and a uniform taper of approximately 0.11 inches per foot of length. A handhole shall be provided 1'-6" above the base.

The poles shall be internally painted up to 4'-0" above the base plate with a rust inhibitor. In addition to the internal paint, the pole shall also be externally painted up to a point where the base cover covers the external paint. This information shall be clearly stated in the shop drawings.

The pole shall come complete with frangible couplings and a full height ventilated base cover. The ventilated base cover shall allow air movement within the base cover. The base covers shall be as detailed on the plans. The couplings shall not be paid for under this pay item and shall be paid for separately. The base covers shall be extra deep enough to cover anchor bolts and frangible couplings. Base covers shall be made of Corten Steel and shall be provided by the pole manufacturer.

The entire pole assembly shall be in compliance with the Village of Buffalo Grove Standard Light Pole, Type D, Exhibit Number 601, in the Village of Buffalo Grove Development Ordinance and shall be as detailed on the plans and as specified herein. The Ordinance can be obtained by calling the Village of Buffalo Grove at (847)459-2500. Light pole assembly shall be as manufactured by Funk Linko.

The pole and luminaire arm shall fit together to make a final luminaire mounting height of 35'-0".

A grounding nut and stud shall be provided in the base of each pole at the handhole for lug attachment. The handhole shall be gasketed to meet U.L. requirements.

The pole shall meet the 1985 version of the AASHTO Specification. Minimum requirements shall be that the pole shall be able to withstand 100mph winds with a 1.3 gust factor.

### Shipment

The poles shall be carefully inspected at the factory prior to shipment to assure that the poles are complete and free of defects.

When poles are stacked together, they shall be supported with suitable spacers or shall otherwise be protected from dents and other potential shipping damage. The spacing and protective materials shall be suitable for and usable in the storage of the poles.

### Installation

The light pole shall be set plumb on the foundation without the use of shims, grout or any other leveling devices under the pole base. The mast arm shall be set at right angles to the centerline of the pavement. (The leveling area of the luminaire shall be set in a plane parallel to the roadway taking into consideration the upgrade or downgrade and the super-elevation of the roadway.)

This item shall be coordinated with the applicable luminaire (with pole wire and fusing), foundation, anchor bolts and breakaway devices.

Poles shall not be installed until luminaires are available for installation at the same time the poles are installed. Poles shall not be installed and left standing without a coordinated installation of the mast arm and luminaire. **POLES SHALL NOT BE PAID UNLESS THE COORDINATED ASSEMBLY, INCLUDING MAST ARM, AND LUMINAIRE, IS COMPLETE.**

#### Basis of Payment

This item will be paid for at the contract unit price each for LIGHT POLE, STEEL, 35 FT. M.H., 6 FT. MAST ARM; which shall be payment in full for furnishing, installing and performing the work described herein and as shown on the plans.

### LUMINAIRE

#### Description

This item shall consist of furnishing and installing a pole mounted luminaire as specified herein and shown on the contract drawings, including furnishing and installing the pole wiring, fuse holders and fusing as specified. See Luminaire Performance Tables at the end of the electrical specification for additional information.

#### Materials

(a) Luminaire, General: The luminaire shall meet the physical and photometric requirements specified herein. It shall be optically sealed, mechanically strong and easy to maintain.

All luminaires and equipment shall be new. Luminaire shall be Quality Lighting # SD-1-1327-FX2, Buffalo Grove Standard Style 4. Luminaires shall be 250W-HPS as detailed in the plans.

Luminaires and component equipment shall be the products of established manufacturers, and shall be suitable for the service required. Luminaires or component equipment items, which are similar or identical, shall be the product of the same manufacturer. The cost of submittals, certifications, any required samples, calculations and similar costs shall not be paid for extra but shall be included in this pay item bid price.

Luminaires shall bear the UL label: "HID Fixture, Suitable for Wet Locations".

(b) Housing: The housing shall be made of heavy gauge welded aluminum and ground smooth with one-piece construction providing exceptional strength and rigidity. There shall be no visible fasteners. The reflector with a lamp socket shall be mounted on a separate compartment. The ballast compartment wiring shall be isolated from the lamp section. Access to the ballast compartment shall be through a hinged door cover, secured by a ¼ turn fastener. The ballast compartment shall serve as the luminaries splice box. The luminaire shall be painted #313 Duronodic Bronze. All latches shall be aircraft type quarter turn latches with leaf spring retainers.

(c) Gasketing: When closed for operation, the optical assembly shall be sealed with a gasket against the entry of moisture, dirt, and insects. The gasket shall be a silicone-impregnated Dacron type.

(d) Reflector: The reflector shall be made of aluminum sheet and shall have a specular finish as detailed on the plans.

(e) Lens: The optically flat clear tempered glass shall be heat and impact resistant. The lens doors shall be welded extruded aluminum ground smooth and powder coated same as the fixture housing. A concealed hinge shall be mounted to the main housing.

(f) Ballast: The ballast shall be a high power factor (90% minimum). All ballasts shall provide reliable lamp starting to -20 degrees Fahrenheit. All ballast components, core and coil, capacitors and starter, shall be mounted to the main support brace.

(g) Lamp: The lamp for each fixture shall be rated at 250W HPS and shall have an output of 30,000 light lumens. The lamp shall be type GE LU250/S or approved equal.

### Installation

Comply with articles 821.03 and 821.04 of the IDOT Standard Specifications.

### Basis of Payment

This item will be paid for at the contract unit price each for LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 250 WATT, which shall be payment in full for the material and work described herein and as shown on the plans.

## LIGHTING CONTROLLER

### Description

This item shall consist of furnishing and installing Lighting Control Cabinets complete with foundations, photocell controls, and wiring for control of street lighting as specified herein, shown on the Contract Drawings and directed by the Engineer. Four (4) Lighting Control Cabinets (#1, #2, #3 and #4) shall be provided as detailed in the drawings.

### General Requirements

The cabinets with all electrical components and parts shall be assembled in a neat orderly fashion. All of the electrical cables shall be installed in a trim, neat, professional manner. The cables shall be trained in straight horizontal and vertical directions and be parallel, next to, and adjacent to other cables whenever possible. Each completed controller shall be UL Listed as an Industrial Control Panel under UL 508.

### Cabinet

The cabinets shall be of the dimensions shown on the Plans and shall be fabricated from 3.175-mm (0.125-inch) thick aluminum alloy No. 3003-H14. The cabinets shall comply with ANSI C33.71 and UL 50. Cabinets shall be reinforced with aluminum angles. The compartment doors shall have stainless steel hinges. The door handles shall be stainless steel and shall have a minimum diameter of 12.7-mm (0.5 inches) and have a padlock provision. The cabinet doors shall have stainless steel nameplates.

The doors shall be gasketed to exclude the entry of moisture, dirt, and insects.

The equipment-mounting panels shall be made of 6.35-mm (1/4-inch) minimum non-asbestos, inorganic non-conducting and shall be drilled and tapped for front mounting of the equipment. The panels shall be easily installed and removed from the front of the cabinet. Metal mounting panels, as detailed on the drawings will be acceptable in lieu of the non-conducting panels. All cable and connections shall be in front



of the panels.

All wiring and bus bars shall be of a size to handle the rated current of the connected equipment. Exposed bus bars shall be insulated, except for ground and neutral bus bars.

A linkage-arm system, of simple construction, shall be attached to the cabinet doors to secure them in a wide-open position to insure safety during field operations.

The interior compartment shall be insulated on the inside of the sides, back, top, bottom, and inside of the doors with one-inch thick polyisocyanurate rigid foam insulation board. The foam board shall have foil facers on each side. The side facing the interior of the cabinets shall have a white tinted foil facer with a satin finish. The insulation shall have a minimum aged thermal resistance (R-value) of 8 at a 4.44° C (40° F) mean temperature. The insulation shall comply with Federal Specification HH-I-1972/1, Class 2.

- (a) Finish: The cabinets shall be cleaned before painting inside and outside with oxalic acid for 5 to 10 minutes, or as otherwise recommended by the paint manufacturer and approved by the Engineer, to etch the metal surfaces.

The cabinets shall then receive two (2) sprayed coats of white polyamide epoxy primer with a corrosion inhibitor applied inside and outside to all surfaces. The primer shall have a solids content, by volume of not less than 65% +3% and each coat shall be applied to a thickness of 0.076 mm to 0.127 mm (3-5 mils).

The interior and exterior, (all surfaces), shall then receive one (1) final coat of silicone alkyd enamel paint. The finish paint shall have a solids content, by volume, of not less than 53% +3%, and shall be applied to a thickness of 0.0038 mm to 0.064 mm (1.5 - 2.5 mils).

The color of the finish paint shall be green.

The finish shall be applied in accordance with the paint manufacturer's recommendations and the manufacturer shall certify, in writing, that the finish has been applied properly.

Submittal data submitted for approval shall address the requirement for the paint manufacturer's certification and shall include a standard, single source paint warranty by the paint manufacturer or the controller manufacturer to the Owner.

- (b) Ground & Neutral Bus Bars: Separate ground and neutral bus bars shall be provided. The ground bus bar shall be copper, mounted on the equipment panel, fitted with 22 connectors of the type as shown on the plans, as a minimum. The neutral bar shall be similar. The heads of connector screws shall be painted white for neutral bar connectors and green for ground bar connectors.
- (c) Circuit Breakers: All feeders, branch circuits, and auxiliary and control circuits shall have overcurrent protection. Unless otherwise indicated, the overcurrent protection shall be by means of circuit breakers.

Unless otherwise indicated, circuit breakers shall be standard UL-listed molded case, thermal-magnetic bolt-on type circuit breakers with trip-free indicating handles.

Unless otherwise indicated, circuit breakers shall have a UL-listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated circuit voltage for which the breaker is applied.

The number of branch circuit breakers shall be as indicated on the Control Cabinet detail drawing or as indicated in the lighting system wiring diagram which ever is greater plus two (2) spare circuit breakers.

- (d) Contactors: Unless otherwise indicated, contactors shall be electrically operated, mechanically held, with the number of poles required for the service and with operating coil voltage as indicated or otherwise required. Ampere rating of contactors shall be not less than that required for the duty shown and shall otherwise be rated as indicated.

Contactors shall be complete with a non-conducting inorganic, non-asbestos sub-panel for mounting.

Contactors shall be mechanically held and shall be complete with coil-clearing contacts to interrupt current through the coil once the contactor is held in position.

The main contactor contacts shall be the double break, silver to silver type. They shall be spring-loaded and provide a wiping action when opening and closing. The contacts shall be renewable from the front panel, self-aligning, and protected by auxiliary arcing contacts.

The line and load terminals shall be pressure type terminals of copper construction and of the proper size for the ampere rating of the contactor.

A lever for manual operation shall be incorporated in the contactor. Protection from accidental contact with current-carrying parts when operating the contactor manually shall be provided.

Unless otherwise indicated, the contactor-operating coil shall operate at 120 volts, single phase.

Unless otherwise indicated, contactors furnished under this specification shall be two-pole devices with continuous rating for 100 amperes per pole at 240 Volts AC.

Open and closed positions shall be clearly indicated and labeled in a permanent manner as approved by the Engineer.

- (e) Auto/Manual Control: Unless otherwise indicated, the cabinet shall be equipped with automatic and manual operating controls via two single pole double throw switches, one being a maintained-contact manual-automatic selector switch and one being a momentary-contact manual on-off switch with a center rest position. Both switches shall be premium specification grade, rated for the applied duty but not less than 20 amperes at 240 volts and each shall be mounted in a 101.6 mm (4-inch) square box with cover.

The control circuit shall have overcurrent protection as indicated and as required by NEC requirements.

- (f) Interior Lighting and Receptacle: The cabinets shall have an auxiliary device circuit at 120 volts single phase to supply a convenience receptacle and cabinet light. The auxiliary circuit shall have overcurrent protection in accordance with NEC requirements.

The cabinets shall be equipped with an interior, 60-watt incandescent lighting fixture of the enclosed-and-gasketed type, switched from a single pole, single throw, 20-ampere switch. The switch shall be premium specification grade in a suitable 101.6-mm (4-inch) box with a cover.

The cabinets shall be equipped with a 20-ampere duplex ground fault-interrupting receptacle, premium specification grade in a 101.6-mm (4-inch) square box with a cover, for 120 volt auxiliary use.

- (g) Surge Arrester: The controller cabinets shall be equipped with surge arresters as detailed on the drawings. The surge arrester shall be UL-listed and be designed for main service protection.

- (h) Photocell: Photocell shall be equipped with standard 3-prong NEMA locking-type plug

connection suitable for mounting on luminaires with locking-type receptacle.

120V ac operation with 1000VA ballast load rating

Built-in delayed response (2 minutes min.) for preventing false switching

Photocell shall be in full compliance with ANSI C-136.1 standards and be UL listed.

Weatherproof housing fabricated from polypropylene for high impact strength.

- (i) **Wiring and Identification:** Unless otherwise indicated, power wiring within the cabinet shall be of the size specified for the corresponding service conductors and branch circuits and shall be rated RHH/RHW, 600 volts.

Unless otherwise indicated, control and auxiliary circuit wiring shall be rated RHH/RHW or MTW with jacket, 600 volts.

Unless otherwise indicated, all power and control wiring shall be tagged with self-sticking cable markers and shall be stranded copper. If the contract drawings do not specifically indicate assigned wire designations, the manufacturer shall assign wire designations and indicate them on the shop drawings.

All switches, controls and the like shall be identified both as to function and position (as applicable) by means of engraved 2-color nameplates attached with screws, or where nameplates are not possible in the judgement of the Engineer, by the use of cloth-backed adhesive labels as approved by the Engineer.

- (j) **Testing of the Assembled Cabinets:** Prior to shipment of the completed control cabinets, the control cabinets shall be tested for load, short circuits and complete operation of the cabinets as specified herein and shown on the plans. The test shall be made at the manufacturer's shop, by the manufacturer and shall be witnessed by the Engineer. The contractor shall arrange the test date with the Engineer and so allow not less than seven (7) days advance notice. The cabinets shall not be delivered to the job site until inspected, tested and approved for delivery by the Engineer.

- (k) **Foundation:** The foundations shall be furnished and installed in place to the dimensions shown on the Plans, including extra pad in front of the cabinet. The top of the foundation shall extend 304.8 mm (12-inches) from the surrounding finished grade. The anchor bolts shall comply with ASTM A576. The top 152.4-mm (6-inches) of the anchor bolts shall be hot dipped galvanized steel according to ASTM 153. The nuts and lock washers and flat washers shall be galvanized also. The foundation shall include raceways of rigid plastic or as noted on the Plans.

#### Basis of Payment

This work will be paid for at the contract unit price each for LIGHTING CONTROLLER, SPECIAL, which shall be payment in full for the control cabinet work, complete, as shown on the plans and as specified herein.

### ELECTRIC SERVICE INSTALLATION

#### Description

It shall be the responsibility of the Contractor to make any necessary arrangements with the utility for the installation of the service entrance cabling, transformer, metering, etc., not specifically detailed on the plans or in the special provisions.

The Contractor shall provide 120/240 VAC, 1-phase, 100 Amp service as detailed on the plans and specified herein. This item shall include furnishing of the enclosure for the metering device. The Contractor shall coordinate the installation of the meter enclosure with the cabinet manufacturer and the meter enclosure shall be painted to match with the control cabinet.

The meter shall be provided by the serving utility, Commonwealth Edison. It is the contractor's responsibility to coordinate all the installation with the utility company. Contractor shall provide all necessary conduits and cables for service connections as specified on the plans. Contractor shall coil up sufficient length of cable near the transformer for connection by utility. Contractor shall also provide the enclosure for the utility meter as required by the utility company.

#### Measurement and Payment

This work will be paid for at the contract unit price per each, which shall be payment in full, for the work specified herein and detailed on the plans. Payment will be made under item ELECTRIC SERVICE INSTALLATION.

### ELECTRIC UTILITY SERVICE CONNECTION

#### Description

This item shall consist of payment for work performed by the Electric Utility Company in providing or modifying electric service as indicated. THIS MAY INVOLVE WORK AT MORE THAN ONE ELECTRIC SERVICE.

#### Construction Requirements

It shall be the Contractor's responsibility to contact the utility. The Contractor shall coordinate his work fully with the electric utility both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement.

The Contractor should make particular note of the need for the earliest attention to arrangements with the utility for service. In the event of delay by the utility, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution of the Contract.

#### Method of Payment

The Contractor will be reimbursed to the exact amount of money as billed by the Electric Utility Company 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 \$12,000.00.

#### 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.

## LIGHT POLE BASE COVER

### Description

This item shall consist of the furnishing and installation of the light pole base covers for the relocated light poles.

Proposed base covers shall cover the entire anchor bolt and breakaway coupling assembly. It shall be the contractor's responsibility to verify the exact size required. The base covers shall contain ventilation slots for air circulation and shall be Corten Steel as manufactured by Funk Link. The base covers shall be as detailed on the plans. The Existing functional base covers being removed shall remain the property of the Village. Existing damaged base covers shall become property of the Contractor and be disposed off site.

### Measurement and Payment

This work shall be paid for at the contract unit price under the item:

BASE COVER, LIGHT POLE

This price shall include all of the labor, materials and incidents necessary for the complete removal and installation of the proposed base covers.

## GROUND ROD

### Description

This item shall consist of furnishing and installing of the ground rod at each light pole foundation, at the 3-point ground field and in each single handhole as shown on the plans and described herein.

The ground rod shall be 3/4" diameter, 10' long copper clad, complying with IDOT Standard Specification 1087.01(b).

The ground rod shall be installed as detailed on the plans. All connections to the ground rod shall be made using exothermic type connectors. See plans for exact installation and wiring requirements.

### Measurement and Payment

This work shall be paid for at the contract unit price for GROUND ROD, 3/4" DIA., X 10' which price shall include all of the labor, materials and incidents. Ground rods installed at the light pole foundations, at the ground field and at the handholes shall be paid for under this item.

## UNIT DUCT

### Description

This item shall consist of the furnishing and installation of Unit Duct as shown on the plans and as specified in IDOT Standard Specification Section 816.

Coilable Nonmetallic Conduit shall be 2" minimum in trade size.

### Installation

Prior to splicing or terminating of the wiring within light poles, handholes or at the lighting controllers, it shall be the contractors responsibility to demonstrate to the owner and engineer that the cable/duct assembly is not damaged or kinked in any areas by pulling the cable back and forth within the Unit Duct. Once the owner and engineer have witnessed this demonstration, contractor may proceed with all splicing and terminations. Any wiring spliced or terminated prior to approval by the owner or engineer will be required to be disconnected, demonstrated to be free from damage and then spliced or terminated by the contractor at no cost to the project. Any cable/duct assembly found to be damaged or kinked in any area shall be repaired or replaced to the satisfaction of the owner and engineer at no cost to the project.

### Basis of Payment

This work shall be paid for at the contract unit price per meter installed for:

UNIT DUCT, WITH 2-1/C #6 AND 1-1/C #8 GROUND, 600V (XLP – TYPE USE), 2" DIA., POLYETHYLENE

UNIT DUCT, WITH 3-1/C #6 AND 1-1/C #8 GROUND, 600V (XLP – TYPE USE), 2" DIA., POLYETHYLENE

UNIT DUCT, WITH 4-1/C #6 AND 2-1/C #8 GROUND, 600V (XLP – TYPE USE), 2" DIA., POLYETHYLENE

UNIT DUCT, WITH 2-1/C #6 AND 1-1/C #8 GROUND AND 3-1/C #12 AND 1-1/C #12 GROUND, 600V (XLP-TYPE USE), 2" DIA., POLYETHYLENE

## RESTORATION

### Description

The contractor shall exercise care at all times so as to avoid damaging any existing sidewalk, driveways, curb and gutter, street pavement, yards, trees, shrubbery, signs, buildings, etc. Those items damaged by the contractor shall be repaired or replaced by the contractor (as directed by the Engineer) at no cost to the State or the Village.

Existing grass lawns shall be restored with 4 inches of topsoil and sod. All natural appurtenances shall be restored as nearly as possible to their original condition.

All rubbish and surplus material shall be disposed of promptly upon completion of each day's work. The general area shall be left in a neat and workmanlike condition. The contractor shall be responsible for maintaining all disturbed areas until final acceptance.

### Measurement and Payment

The cost of restoration shall be included in the respective items in the contract and will not be paid for separately.

## BREAKAWAY DEVICE

### Description

This item shall consist of the furnishing and installation of the light pole breakaway device for all lighting

units as shown on the plans and as specified in IDOT Standard Specification Section 838.

The couplings shall be Transpo Pole-Safe Model 4000 Series (or approved equal). It shall be the contractor's responsibility to verify the exact size required. Existing functional breakaway devices being removed shall be turned over to the Village as required. Existing damaged breakaway devices shall be disposed off site.

#### Basis of Payment

This work shall be paid for at the contract unit price under the item:

#### BREAKAWAY DEVICE

This price shall include all of the labor, materials and incidents necessary for the complete removal and installation of the proposed breakaway devices.

### MAINTENANCE OF LIGHTING

#### Description

This item shall consist of work performed by the Contractor in maintaining the existing lighting levels and structural integrity of the existing lighting system.

#### Construction Requirements

These requirements shall serve as an addition to the IDOT Standard Specification Article 801.12. The Contractor shall ensure that existing lighting positions shall be functional at the end of the day for nighttime lighting. The lighting system is to be checked daily for proper operations before leaving the work site.

An initial inspection of the system shall be performed the first day of construction. Any equipment affected by the work which may be broken, missing, defective or malfunctioning shall be noted and reviewed with the Village and submitted for the record. Without a record, the system transferred to the Contractor shall be returned to the Village in complete operating condition. It is the Contractor's responsibility to visit the site to confirm the equipment and system to be maintained. The Contractor must schedule a formal transfer of maintenance from the Village, however failure to do so does not relieve the Contractor of the maintenance responsibility specified, and such failure obligates the Contractor to correct all deficiencies in the existing system at his own expense. If no inspection is performed, the transfer shall be considered to have taken place when the Contractor first begins work at the job site. At the conclusion of construction, the Contractor shall contact the Village for an inspection. Upon the Village's approval of the work, the maintenance of lighting shall be transferred back to the Village.

The Contractor shall locate and protect all existing wiring to remain. If any cable is damaged, the Contractor is to record the damage to insure that the proper repairs are made. The Contractor also must maintain the structural integrity of any foundations disturbed during this contract. It shall be the Contractor's responsibility to repair/repaint any poles that are damaged by the Contractor's fault or neglect. Repair shall be at the Contractor's own cost.

The Contractor shall respond to damage calls for all system components under the Contractor's maintenance, existing and proposed, including, but not limited to pole knockdowns, circuit outages and controller outages using immediate corrective action. The Contractor shall provide the Village with all accident and damage reports from any incidents. The contract drawings may 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.

The Contractor shall insure that the installation is left in a safe condition, with no exposed or accessible wiring, open boxes or handholes, etc.

#### Measurement and Payment

This work shall be paid for at the contract lump sum price under the item:

MAINTENANCE OF *EXISTING LIGHTING SYSTEM COMPLETE*

This price shall include all of the labor, materials and incidents necessary for the complete lighting system protection.

#### EXISTING FIXTURE MAINTENANCE

##### Description

This item shall consist of the furnishing and installation of new lamps in all existing light fixtures within the project limits. Contractor shall also clean all reflectors and lenses as required. Any fixtures having existing damage or leaking ballasts shall be brought to the attention of the Engineer and Owner. Any fixtures damaged during construction shall be replaced by the Contractor at no cost to the project.

It shall be noted that there are various types of fixtures on site. It shall be the contractor's responsibility to coordinate all work with the light fixture manufacturer.

##### Basis of Payment

This work shall be paid for at the contract unit price under the item:

EXISTING FIXTURE MAINTENANCE

This price shall include all of the labor, materials and incidents necessary for the complete removal and replacement of lamps and cleaning of the fixtures.

#### PHOTOCELL SHORTING CAP

##### Description

This item shall consist of the removal of existing photocells on existing light fixtures and the furnishing and installation of photocell shorting caps for existing light fixtures as shown on the plans. Existing photocells removed from the light fixtures shall be turned over to the Owner.

The proposed photocell shorting caps shall be as manufactured by Ripley Photocontrols, Tork or the light fixture manufacturer. All work shall be per light fixture manufacturer recommendations.

##### Basis of Payment

This work shall be paid for at the contract unit price under the item:



PHOTOCELL SHORTING CAP

This price shall include all of the labor, materials and incidents necessary for the complete removal of the existing photocells and the installation of the new photocell shorting caps.

Deerfield Parkway STP Improvement  
Section No. 03-00088-00-FP  
Job No.: C-91-266-05  
Project No. M-8003(524)  
Contract No.: 83807

## **TRAFFIC CONTROL AND PROTECTION SPECIAL PROVISIONS**

**Traffic Control Plan (L.C.-T- Section 700), Effective 04/22/03**

Traffic Control shall be in accordance with the applicable sections of the "Standard Specifications", the "Supplemental Specifications", the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, Millennium Edition" "Quality Standard for Work Zone Traffic Control Devices", any special details and Highway Standards contained in the plans and the special provisions contained herein.

Special attention is called to Articles 105.05, and 107.09, and to Sections 701, 702, 704, and 782 of the "Standard Specifications", and to the following Highway Standards, Details, Recurring Special Provisions and Special Provisions contained herein, relating to traffic control.

The Contractor shall contact the Engineer at least 72 hours in advance of beginning work.

**STANDARDS**

LC7001, LC7002, LC7003, LC7004, LC7005, LC7006, LC7007, LC Pavement Marking, 701301, 701306, 701326, 701421, 702001, 720001, 720006, 720011, 729001, 780001, TC-11, TC-14, TC-16, TC-18, and TC-22.

**DETAILS**

- a.) Typical Application Of Traffic Control Devices Highway Construction, Contract Maintenance
- b.) Typical Application Of Traffic Control Devices Highway Construction, Contract Maintenance and Utility Operations
- c.) Traffic Control and Protection for Side Roads, Intersections and Driveways (LCDOT)
- d.) Multilane Two Way Traffic, Undivided Or Multilane Two Way Traffic Divided With Flush Median, Day Or Night Operations
- e.) Typical Lane Closure, Three Lane Road Section
- f.) Direction Indicator Barricade
- g.) Temporary Information Signing For Commercial Entrance
- h.) Typical Pavement Markings For County Highways
- i.) Lane Closure, 2L 2W, Short Time Operations
- j.) Lane Closure, 2L 2W, Slow Moving Operations Day Only For Speeds  $\geq$  45 MPH
- k.) Lane Closure, 2L 2W, Pavement Widening, For Speeds  $\geq$  45 MPH
- l.) Lane Closure, Multilane, Day Operations Only, For Speeds  $\geq$  45 MPH to 55MPH
- m.) Traffic Control Devices
- n.) Sign Panel Mounting Details
- o.) Sign Panel Erection Details
- p.) Metal Posts For Signs, Markers And Delineators

- q.) Typical Pavement Markings
- r.) Typical Applications Raised Reflective Pavement Markers (Snow-plow Resistant)
- s.) Traffic Control and Protection at Turn bays (To Remain Open to Traffic)
- t.) Temporary Pavement Marking Letters and Symbols
- u.) Sign for Flagging Operations at Work Zone Openings
- v.) Temporary Information Signing

### **BDE SPECIAL PROVISIONS**

File Name 80124 - "Portable Changeable Message Signs".

### **DETOURS**

Detours and Road Closures on County Maintained Roads within Lake County, Illinois shall be in accordance with the applicable sections of the "Standard Specifications", the "Supplemental Specifications", the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", the Lake County Division of Transportation's Detour Procedures and Guidelines, any special details and Highway Standards contained in the Detour Plan and the Special Provisions contained herein. The LCDOT's Detour Procedures and Guidelines is available from the LCDOT, Traffic Engineering Section upon request.

### **Traffic Control and Protection (L.C.-T- Section 700), Effective 04/22/03**

The Traffic Control and Protection shall meet the requirements of Section 700. Work Zone Traffic Control, Signing and Pavement Marking of the "Standard Specifications" except as follows:

**Article 701.01 "Description"** shall be replaced with the following:

701.01 Description. This item of work shall include furnishing, installing, maintaining, replacing, relocating and removing all traffic control devices used for the purpose of regulating, warning or directing traffic during the construction or maintenance of this improvement.

Traffic Control and Protection shall be provided as called for in the plans, these special provisions, applicable Highway Standards, applicable sections of the "Standard Specifications", or as directed by the Engineer.

The governing factor in the execution and staging of work for this project is to provide the motoring public with the safest possible travel conditions along the roadway through the construction zone. The Contractor shall arrange his/her operations to keep the closing of any lane of the roadway to a minimum.

Traffic control devices include signs and their supports, signals, pavement markings, barricades and their approved weights, channeling devices, warning lights, arrow boards, flaggers, or any other device used for the purpose of regulating, detouring, warning or guiding traffic through or around the construction zone.

**Article 701.04 "General", section (b) "Contractor's Operations and Equipment", paragraph (4) shall be replaced with the following:**

(4) The Contractor is required to conduct routine inspections of the work site at a frequency that will allow for the timely replacement of any traffic control device that has become displaced, worn or damaged to the extent that it no longer conforms to the shape, dimensions, color and operational requirements of the MUTCD, the Traffic Control Standards or will no longer present a neat appearance to motorists. A sufficient quantity of replacement devices, based on vulnerability to damage, shall be readily available to meet this requirement.

The Contractor shall be responsible for the proper location, installation and arrangement of all traffic control devices. Special attention shall be given to advance warning signs during construction operations, in order to keep lane assignments consistent with barricade placement at all times. The Contractor shall immediately remove, cover or turn from the view of motorists all traffic control devices which are inconsistent with the detour, lane assignment patterns or conflicting conditions created during the transition from one construction stage to another. When the Contractor elects to cover conflicting or inappropriate signing, the materials used shall totally block out the reflectivity of the sign and shall cover the entire sign. The method used for covering the signing shall meet with the approval of the Engineer.

The Contractor shall coordinate all traffic control work on this project with any adjoining or overlapping projects. The coordination will include any barricade placements necessary to provide a uniform traffic detour pattern. When directed by the Engineer, the Contractor shall remove all traffic control devices that he/she furnished, installed and maintained under the contract. Such devices shall remain the property of the Contractor. All traffic control devices shall remain in place until the Engineer specifically authorizes their relocation or removal.

The Contractor shall ensure that all the traffic control devices he/she installs are operational, functional and effective 24 hours a day, 7 days a week, including

holidays.

**Article 701.04 "General"** shall be modified by adding the following sections:

**(g) Public Safety and Convenience:**

The Contractor shall provide a telephone number for a responsible individual who can be contacted 24 hours a day, 7 days a week, to receive notification of any deficiencies in traffic control and protection. The Contractor shall dispatch men, materials, and equipment to correct any such deficiencies. The Contractor shall respond to any call from the Village or LCDOT concerning any request for improving or correcting traffic control devices and begin making the requested repairs within two (2) hours from the time of notification.

Personal vehicles shall not park within the right-of-way except in specific areas designated by the Engineer. All roads shall remain open to traffic. The Contractor may close one lane on two lane roads, because of construction, between the hours of 9:00 AM and 3:00 PM only. The Contractor shall maintain one-way traffic during these restricted hours with the use of signs and flagmen as shown on the Traffic Control Standards. Two lanes of traffic will be maintained between the hours of 3:00 PM and 9:00 AM and when no construction activities are being carried out. The restricted lane closure time provision may be waived at the Resident Engineer's discretion. The Contractor shall maintain at least one lane in each direction on roads with four or more lanes. The Contractor shall also maintain entrances and side roads along the proposed improvement. Interference with traffic movements and inconvenience to owners of abutting property and the public shall be kept to a minimum. Any delays or inconveniences incurred by the Contractor while complying with these requirements shall be considered incidental to the contract, and no additional compensation will be allowed.

On two lane roads, the Contractor will plan his/her work so that there will be no open holes in the pavement and so that all barricades will be removed from the pavement during non-work hours.

On highways with four or more lanes, the Contractor will plan his/her work so that there shall be no open holes in the pavement being used by the traveling public. Lane closures, if allowed, will be in accordance with the applicable standards, staging details shown in the plans and any other applicable contract documents.

The Contractor shall remove all equipment from the shoulders and medians after work hours.

The Contractor shall not institute any road closures or restrictions except those covered by the plans and specifications of this contract without written approval from the Engineer.

(h) Traffic Control Deficiency Charge: (See BDE Special Provision 57291)

~~The primary concern of the Village and LCDOT is to maintain a safe travel way for the public and a safe environment for the worker in the construction zone. The Contractor is expected to comply with the "Standard Specifications", contract plans, these special provisions, and directions from the Engineer concerning traffic control and protection. The Contractor shall provide a telephone number for a responsible individual who can be contacted 24 hours a day, 7 days a week, to receive notification of any deficiencies in the traffic control and protection.~~

~~When the Engineer is notified or determines a traffic control deficiency exist, the Engineer 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 ½ (one half) hour to 8 (eight) hours based upon the urgency of the situation and the nature of the deficiency. The Engineer will be the sole judge.~~

~~The deficiency may be any lack of repair, maintenance of, or non-compliance with the traffic control plan.~~

~~If the Contractor fails to correct the deficiency within the specified time, a traffic control deficiency shall be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with the notification and end with the Engineer's acceptance of the correction. The traffic control deficiency charge shall be for the full amount per day for each day the deficiency existed. The daily monetary deduction per deficiency shall be either \$1,000.00 or 0.05 of one percent of the awarded contract value, whichever is greater.~~

~~In addition, if the Contractor fails to respond, the Engineer may correct the deficiency and the cost thereof shall be deducted from the cost of the contract. The charge shall be separate and in addition to the traffic control deficiency deduction.~~

~~The Contractor shall not be relieved of any contractual responsibilities by the Village or LCDOT's action.~~

Article 701.04(c) "Flaggers", paragraph (1) "General" revise the first sentence to read:

"The flagger shall be stationed to the satisfaction of the Engineer and 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 the

American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments and approved flagger traffic control signs conforming to Standard 702001 and Article 702.05(e).”

**Article 701.04(c) “Flaggers”**, paragraph (6) “Night Time Flagging” shall be revised to read: “The flagger station shall be lit by additional overhead lighting other than streetlights. The flagger shall be equipped with a fluorescent orange, fluorescent yellow/green or a combination of a fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification 107-1999 for Conspicuity Class 2 garments.”

**Article 701.05 “Specific Procedures”**, section (c) “Surface Course and Pavement” paragraph (1) will be replaced by the following:

- (1) Prime Coat. "Fresh Oil" signs (W21-1) shall be used when the prime coat is applied to pavement that is open to traffic. The signs are to remain in place until tracking of the prime ceases. These signs shall be erected a minimum of 500 feet (150 m) preceding the start of the prime and on all side roads within the posted area. The signs on the side roads shall be posted a minimum of 200 feet (60 m) from the mainline pavement. These signs are excluded from the time requirements of Article 701.04 (h) ” Deficiency Charge” (above). Non-compliance with the provisions of this section, by the Contractor, shall result in an immediate traffic control deficiency charge. All signs shall have an amber flashing light attached.

**Article 701.05 “Specific Procedures”**, section (c) “Surface Course and Pavement” paragraph (2) will be replaced by the following:

- (2) Cold Milling. "Rough Grooved Surface" signs (W8-I107) shall be used when the road has been cold milled and is open to traffic. The signs shall remain in place until the milled surface condition no longer exists. These signs shall be erected a minimum of 500 feet (150 m) preceding the start of the milled pavement and on all side roads within the posted area. The signs on the side roads shall be posted a minimum of 200 feet (60 m) from the mainline pavement. All signs shall have an amber flashing light attached.

**Article 701.05 “Specific Procedures”**, section (c) “Surface Course and Pavement” shall be modified by adding the following paragraph:

- (7) Area Reflective Crack Control Treatment Fabric. "Slippery When Wet" signs (W8-5) shall be used when crack control fabric is applied to pavement that is open to traffic. These signs shall remain in place until the binder course is laid. The signs shall be erected a minimum of 500 feet (150 m) preceding the start of the crack control treatment and on all side roads within the posted area. The signs on the side roads shall



be posted a minimum of 200 feet (60 m) from the mainline pavement. These signs are excluded from the time requirements of Article 701.04 (h) "Deficiency Charge" (above). Non-compliance with the provisions of this section, by the Contractor, shall result in an immediate traffic control deficiency charge. All signs shall have an amber flashing light attached.

**Article 701.06 "Highway Standards Application"**, section (b) "Standard 701316 and 701321" paragraph (2) g., shall be replaced with the following:

- g. Microwave Vehicle Sensors. Microwave Vehicle Sensors shall be installed as directed by the Engineer. The installation of the microwave vehicle sensors shall meet the applicable requirements of Sections 849 and 850 of the "Standard Specifications". LCDOT shall approve the proposed microwave vehicle sensor before the Contractor may furnish or install it. The Contractor shall install, wire and adjust the alignment of the sensor in accordance to the manufacturer's recommendations and requirements. The Engineer shall approve the installation.

The microwave vehicle sensor shall meet the following requirements:

- Detection Range: Adjustable to 60 feet (18 m)
- Detection Angle: Adjustable, horizontal and vertical
- Detection Pattern: 16 degree beam width minimum. [at 50 feet (15 m) the pattern shall be approximately 15.5 feet (4.7 m) wide]
- Mounting: Heavy-duty bracket, predrilled and slotted for pole mounting

**Article 701.06 "Highway Standards Application"**, section (g) "Standard 701521 and 701416" The second sentence in the third paragraph shall be revised to read:

When Standard 701416 is specified, vertical panels may be attached to the concrete barriers where available space prohibits the use of Type II barricades.

**Article 701.06 "Highway Standards Application"**, section (k) "Urban Traffic Control, Standards 701501, 701606, 701601, 701701, 701801" paragraph (1) General", shall be modified by adding the following paragraphs:

Whenever a lane is closed to traffic using Standard 701601, 701606, or 701701, the pavement width transition sign (W4-2R or W4-2L) shall be used in lieu of the "Workers" sign (W21-1 or W21-1a).

Whenever any vehicle, equipment, workers or their activities infringe on the shoulder or within 15 feet (4.5 m) of the traveled way, and the traveled way remains unobstructed, then the applicable Traffic Control Standard shall be 701006, 701011, 701101, or 701701. The "Shoulder Work Ahead" sign (W21-5(0)-48) shall be used in

lieu of the "Workers" sign (W21-1 or W-21-1a).

All diamond shaped warning signs shall have a minimum dimension of 48 inches x 48 inches (1.2 m x 1.2 m). The Engineer may approve diamond shape warning signs measuring 36 inches x 36 inches (900 mm x 900 mm) when the posted speed limit is 30 M.P.H. or less.

**Article 701.06 "Highway Standards Application"** shall be modified by adding the following section:

- (l) Standard 701331. When Standard 701331 is specified on two-lane, two-way roadways, the "DETOUR AHEAD" sign shall be replaced with a "LANE SHIFT AHEAD" sign.

**Article 701.07 "Method of Measurement"** shall be replaced completely with the following:

701.07 Method of Measurement.

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

**Article 701.08 "Basis of Payment"** shall be replaced completely with the following:

701.08 Basis of Payment

This work will be paid for at the contract unit price per lump sum for TRAFFIC CONTROL AND PROTECTION. The payment will be in full for all labor, materials, transportation, and incidentals necessary to furnish, install, maintain, replace, relocate and remove all traffic control devices indicated in the plans and specifications, except for the following items, which will be paid for separately.

- (1) Temporary Bridge Traffic Signals
- (2) Temporary Rumble Strips [where each is defined as 25 feet (8 m)].
- (3) Temporary Raised Pavement Markers.
- (4) Construction Speed Limit Trailer
- (5) Sand module impact attenuators
- (6) Temporary Bridge Rail
- (7) Traffic Control Supervisor
- (8) Portable Changeable Message Signs
- (9) Temporary Concrete Barrier
- (10) Monodirectional Prismatic Barrier Reflector

The salvage value of the materials removed shall be reflected in the bid price for this item.

Any delays or inconveniences incurred by the Contractor while complying with these requirements shall be considered incidental to TRAFFIC CONTROL AND PROTECTION, and no additional compensation will be allowed.

Any traffic control devices required by the Engineer to implement the Traffic Control Plan as shown in the plans and specifications of the contract shall be considered incidental to the pay item TRAFFIC CONTROL AND PROTECTION.

If the Engineer requires additional work involving a substantial change of location and/or work which differs in design and/or work requiring a change in the type of construction, as stated in Article 104.02(d) of the "Standard Specifications" the standards and/or the designs, other than those required in the plans, will be made available to the Contractor at least one week in advance of the change in traffic control. Payment for any additional traffic control required for the reasons listed above will be in accordance with Article 109.04 of the "Standard Specifications".

Revisions in the phasing of construction or maintenance operations, requested by the Contractor, may require traffic control to be installed in accordance with standards and/or designs other than those included in the plans. The Contractor shall submit revisions or modifications to the traffic control plan shown in the contract to the Engineer for approval. No additional payment will be made for a Contractor requested modification.

In the event the sum total of all work items for which traffic control and protection is required is increased or decreased by more than ten percent (10%), the contract bid price for TRAFFIC CONTROL AND PROTECTION will be adjusted as follows:

$$\text{Adjusted contract price} = 0.25P + 0.75P [1 \pm (X - 0.1)]$$

Where "P" is the contract price for TRAFFIC CONTROL AND PROTECTION

Difference between original and final sum total value  
of all work items for which traffic

Where "X" = control and protection is required.

Original sum total value of all work for which traffic  
control and protection is required.

The value of the work items used in calculating the increase and decrease will include only items that have been added to or deducted from the contract under Article 104.02 of the "Standard Specifications" and only items that require the use of TRAFFIC CONTROL AND PROTECTION.

In the event the Village or LCDOT cancels or alters any portion of the contract that results in the elimination or incompleteness of any portion of the work, payment for partially completed work will be made in accordance with Article 104.02 of the "Standard Specifications".

**Article 702.02 "Materials"** shall be modified by adding the following paragraph:

The Contractor shall use traffic control devices, which are "crash worthy" in accordance with Manual of Uniform Traffic Control Devices and these special provisions. The Contractor shall provide proof of "crash worthiness" by submitting to the Engineer the appropriate "Letter of Certification" sent to the manufacturer of the device by the Federal Highway Administration. These "Letters of Certification shall be given to the Engineer at the preconstruction conference.

**Article 702.03 "Channeling Devices"** section (b) "Barricades", the first paragraph shall be replaced with the following paragraphs:

- (b) Barricades. Type II nonmetallic barricades shall be used at all locations that call for Type I, Type 1A, or Type II barricades.

Any drop off greater than 3 inches (75 mm), but less than 6 inches (150 mm), located within 8 feet (2.5 m) of the pavement edge shall be protected by Type II barricades equipped with mono-directional steady burn lights. The barricades shall be placed at a spacing of 100 feet (30 m) center to center. For any drop off within 8 feet (2.5 m) of the pavement edge that exceeds 6 inches (150mm), the Type II barricades equipped with mono-directional steady burn lights shall be placed at a spacing of 50 feet (15 m) center to center. Barricades that must be placed in excavated areas shall have leg extensions installed so that the top of the barricade is in compliance with the height requirements of Standard 702001.

All Type II barricades, shall be equipped with a steady burn light when used during hours of darkness unless otherwise stated herein.

Extended Leg Type II Barricades. Extended leg type II barricades shall be required for any drop off within 8 feet (2.5 m) of the pavement edge that exceeds 6 inches (150 mm) in depth. Extended Leg Type II barricades shall be in compliance with the height requirements of Standard 702001. Type II extended leg barricades may be of an "A" frame type with either

wood or plastic panels and metal or non-metallic legs. The method of weighting the Extended Leg Type II barricades shall be in accordance with the manufacturer's guidelines and approved by the Engineer. Extended Leg Type II barricades shall be equipped with mono-directional steady burn lights and shall be placed at a spacing of 50 feet (15 m) center to center.

Check barricades shall be placed in work areas perpendicular to traffic every 1,000 feet (300 m), at one per lane and one per shoulder, to prevent motorists from using work areas as a traveled way. Two additional check barricades shall be placed in advance of each patch excavation or any other hazard in the work area. The first will be placed at the edge of the open traffic lane and the second centered on the closed lane. Check barricades shall be Type II and equipped with a flashing amber light.

All Type II Barricades shall be made of plastic, fiberglass or other non-metallic materials. The top panels will be 12 inches x 24 inches (300mm x 600 mm) and the bottom panels will be 8 inches x 24 inches (200 mm x 600 mm). The orange and white reflective sheeting will be Type A, meeting the initial minimum coefficient of reflection in Article 1084.02 of the "Standard Specifications". All other requirements for Type II barricades will be met.

Direction Indicator Barricades shall be used exclusively in lane closure and lane shift tapers. They shall be used only when traffic is being merged with an adjacent through lane or flush median, shifted onto a median crossover or being diverted onto a construction run-around. The barricades shall be placed in series in a taper with the arrow panel directing traffic in the direction of the merge, crossover or run-around. The direction indicator barricades shall meet the requirements for Type II barricades as stated in this special provision. The top panel, which faces traffic, shall be 12 inches x 24 inches (300 mm x 600 mm) with fluorescent orange sheeting meeting the requirements of Article 1084.02(b) of the "Standard Specifications". The top panel indicator arrow shall be 21 inches (530 mm) long with a 9½ inch (240 mm) wide arrow barb and a 3½ inch (90 mm) wide arrow shaft. The top panel, facing away from traffic shall have a 12 inch x 24 inch (300 mm x 600 mm) orange and white diagonal panel. The bottom panels shall be 8 inches x 24 inches (200 mm x 600 mm) with orange and white diagonal sheeting, as shown in LCDOT's Special Detail LC7006. All sheeting shall meet the initial coefficient of retroreflection in Article 1084.02(a) of the "Standard Specifications", for Type A sheeting.

**Article 702.03 "Channeling Devices"**, section (c) "Vertical Panels" shall be modified by adding the following paragraph:

All vertical panels shall be equipped with a steady burn light when used during the hours of darkness unless otherwise stated herein or in the plans. Non-metallic frame supported vertical panels may be used in lieu of Type II non-metallic barricades in

areas which preclude the use of the Type II barricade.

**Article 702.03 "Channeling Devices"**, section (e) shall be replaced with the following:

(e) Drums. Type II barricades shall be used in lieu of drums.

**Article 702.05 "Signs"**, section (a) shall be modified by adding the following paragraphs:

Construction signs referring to daytime lane closures during working hours shall be removed, covered, or turned away from the view of motorists during non-working hours. Upon request, prior to the beginning of construction operations the Contractor will be provided a sign log of all existing signs within the limits of the construction zone. The Contractor is responsible for verifying the accuracy of the sign log. The Contractor shall maintain all existing traffic signs throughout the duration of the project.

All provisions of Article 107.25 of the "Standard Specifications" shall apply except the third paragraph shall be revised to read:

The Contractor shall maintain, furnish and replace at his own expense, any traffic sign or post which has been damaged or lost by the Contractor or a third party. The Contractor will not be held liable for third party damage to large freeway guide signs.

**Article 702.05 "Signs"**, section (d) "Work Zone Speed Limit Signing", paragraph (2) "Construction Speed Limit Signing", shall be modified by replacing the third sentence of the first paragraph with the following sentences:

Additional assembly(s) shall be placed beyond major intersections but shall not exceed a one (1) mile interval. An End Construction Speed Limit Sign shall be posted at the end of the Construction Speed Zone. All other speed limit signs shall be covered or removed within that portion of the zone where the Construction Speed Limit sign is being utilized.

**Article 702.05 "Signs"**, section (d) "Work Zone Speed Limit Signing", paragraph (2) "Construction Speed Limit Signing", shall be modified by replacing the third paragraph with the following:

The speed limit shown on the flashing Construction Speed Limit sign assembly shall be 10 M.P.H. below the posted or work zone speed limit, or 35 M.P.H. which ever is greater.

**Article 702.05 "Signs"** shall be modified by adding the following section,

(f) Temporary Construction Information Signs. When indicated in the traffic control plan or as directed by the Engineer the Contractor shall furnish, install, maintain, relocate, and remove for various stages of construction Temporary Construction Information Signs. These signs shall include all Temporary Construction Information Signs needed by the road users to proceed safely through the work zone.

The following signs are considered Temporary Construction Information Signs:

Entrance	White Legend on Green Background
Warning-New Lanes Open	Black Legend on Orange Background

The signs shall be installed in accordance with the traffic control plan and as directed by the Engineer.

**Article 704 "Temporary Concrete Barrier"** shall be modified by adding the following: Monodirectional, Prismatic Barrier Reflectors as described in Article 782 of the Standard Specifications and the special provisions shall be installed one per barrier unit or one per terminal section.

**Article 782 "Prismatic Reflectors"** shall be modified by adding the following,

The Prismatic Reflector shall be centered 9 ½ inches (240 mm) below the top of the temporary concrete barrier on the side of the barrier, which faces traffic, one per temporary concrete barrier section or temporary concrete barrier terminal section. The Prismatic Reflector shall be reflective in the direction of approaching traffic only and shall match the color of the centerline or edge line, either amber or crystal, where the temporary concrete barrier is placed.

Basis of Payment. The cost of the Monodirectional, Prismatic Barrier Reflector shall be considered incidental to the contract unit price per foot (meter) for Temporary Concrete Barrier or the contract unit price each for Temporary Concrete Barrier Terminal Section.

## BITUMINOUS CONCRETE SURFACE COURSE (BDE)

Effective: April 1, 2001

Revised: April 1, 2003

Replace the fourth paragraph of Article 406.23(b) of the Standard Specifications with the following:

"Mixture for cracks, joints, flangeways, leveling binder (machine method), leveling binder (hand method) and binder course in excess of 103 percent of the quantity specified by the Engineer will not be measured for payment.

Surface course mixture in excess of 103 percent of adjusted plan quantity will not be measured for payment. The adjusted plan quantity for surface course mixtures will be calculated as follows:

Adjusted Plan Quantity = C x quantity shown on the plans or as specified by the Engineer.

where C =    metric:  $C = \frac{G_{mb} \times 24.99}{U}$                       English:  $C = \frac{G_{mb} \times 46.8}{U}$

and where:

$G_{mb}$  = average bulk specific gravity from approved mix design.

U = Unit weight of surface course shown on the plans in kg/sq m/25 mm (lb/sq yd/in.), used to estimate plan quantity.

24.99 = metric constant.

46.8 = English constant.

If project circumstances warrant a new surface course mix design, the above equations shall be used to calculate the adjusted plan quantity for each mix design using its respective average bulk specific gravity."

80050



**BITUMINOUS EQUIPMENT, SPREADING AND FINISHING MACHINE (BDE)**

Effective: January 1, 2005

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."

80142

**COARSE AGGREGATE FOR TRENCH BACKFILL, BACKFILL AND BEDDING (BDE)**

Effective: April 1, 2001  
Revised: November 1, 2003

Revise Article 208.02 of the Standard Specifications to read:

**"208.02 Materials.** Materials shall be according to the following Articles of Section 1000 – Materials:

- (a) Fine Aggregate (Note 1).....1003.04
- (b) Coarse Aggregate (Note 2) .....1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.  
Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first sentence of the second paragraph of subparagraph (b) in Article 208.03 of the Standard Specifications to read:

"Any material meeting the requirements of Articles 1003.04 or 1004.06 which has been excavated from the trenches shall be used for backfilling the trenches."

Add the following to the end of Article 542.02 of the Standard Specifications:

- "(bb) Fine Aggregate (Note 1).....1003.04
- (cc) Coarse Aggregate (Note 2) .....1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.  
Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first and second sentences of the second paragraph of subparagraph (a) of Article 542.04 of the Standard Specifications to read:

"The unstable and unsuitable material shall be removed to a depth determined by the Engineer and for a width of one diameter (or equivalent diameter) of the pipe on each side of the pipe culvert, and replaced with aggregate. Rock shall be removed to an elevation 300 mm (1 ft) lower than the bottom of the pipe or to a depth equal to 40 mm/m (1/2 in./ft) of ultimate fill height over the top of the pipe culvert, whichever is the greater depth, and for a width as specified in (b) below, and replaced with aggregate."

Revise the second paragraph of subparagraph (c) of Article 542.04 of the Standard Specifications to read:

"Well compacted aggregate, at least 100 mm (4 in.) in depth below the pipe culvert, shall be placed the entire width of the trench and for the length of the pipe culvert, except well compacted impervious material shall be used for the outer 1 m (3 ft) at each end of the pipe. When the trench has been widened by the removal and replacement of unstable or unsuitable material, the foundation material shall be placed for a width not less than the above specified widths on each side of the pipe. The aggregate and impervious material shall be approved by the Engineer and shall be compacted to the Engineer's satisfaction by mechanical means."

Revise subparagraph (e) of Article 542.04 of the Standard Specifications to read:

"(e) Backfilling. As soon as the condition of the pipe culvert will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe culvert, except at the outer 1 m (3 ft) at each end of the culvert which shall be backfilled with impervious material. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate and impervious material shall be placed in 200 mm (8 in.) layers, loose measurement. When using PVC, PE, or corrugated metal pipe, the aggregate shall be continued to a height of at least 300 mm (1 ft) above the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means. When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

When using PVC, PE, or corrugated metal pipe a minimum of 300 mm (1 ft) of cover from the top of the pipe to the top of the subgrade will be required.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench shall be backfilled with select material, from excavation or borrow, free from large or frozen lumps, clods or rock, meeting the approval of the Engineer. The material shall be placed in layers not exceeding 200 mm (8 in.) in depth, loose measurement and compacted to 95 percent of the standard laboratory density. Compaction shall be obtained by use of mechanical tampers or with approved vibratory compactors. Before compacting, each layer shall be wetted or dried to bring the moisture content within the limits of 80 to 110 percent of optimum moisture content determined according to AASHTO T 99 (Method C). All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the culvert. The filling of the trench shall be carried on simultaneously on both sides of the pipe.

The Contractor may, at his/her expense, backfill the entire trench with aggregate in lieu of select material. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means.

The backfill material for all trenches and excavations made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk shall be according to Section 208. The trench backfill material shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When the trench has been widened for the removal and replacement of unstable or unsuitable material, the backfilling with aggregate and impervious material, will be required for a width of at least the specified widths on each side of the pipe. The remaining width of each layer may be backfilled with select material. Each 200 mm (8 in.) layer for the entire trench width shall be completed before beginning the placement of the next layer."

Revise subparagraph (b) of Article 542.05 of the Standard Specifications to read:

"(b) Embankment. Embankment extending to an elevation of 300 mm (1 ft) over the top of the pipe shall be constructed according to Article 542.04(f), except the material up to the elevation of the center of the pipe and extending to a width of at least 450 mm (18 in.) on each side of the pipe, exclusive of the outer 1 m (3 ft) at each end of the pipe, shall consist of aggregate. At the outer 1 m (3 ft) at each end of the culvert, impervious material shall be used."

Add the following paragraph after the first paragraph of Article 542.10 of the Standard Specifications:

"Trench backfill will be measured for payment according to Article 208.03."

Add the following paragraph after the third paragraph of Article 542.11 of the Standard Specifications:

"Trench backfill will be paid for according to Article 208.04."

Add the following to of Article 550.02 of the Standard Specifications:

"(m) Fine Aggregate (Note 2).....	1003.04
(n) Coarse Aggregate (Note 3).....	1004.06

Note 2. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 3. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first two sentences of the third paragraph of Article 550.04 of the Standard Specifications to read:

"Well compacted, aggregate bedding material at least 100 mm (4 in.) in depth below the pipe, shall be placed for the entire width of the trench and length of the pipe. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means."

Revise Article 550.07 of the Standard Specifications to read:

**"550.07 Backfilling.** As soon as the condition of the pipe will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate backfill material shall be placed in 200 mm (8 in.) layers, loose measurement and compacted to the satisfaction of the Engineer by mechanical means. When using PVC pipe, the aggregate shall be continued to a height of at least 300 mm (12 in.) above the top of the pipe.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench and excavation shall be backfilled to the natural line or finished surface as rapidly as the condition of the sewer will permit. The backfill material shall consist of suitable excavated material from the trench or of trench backfill as herein specified. All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the sewer and shall be compacted to the satisfaction of the Engineer by mechanical means. The filling of the trench shall be carried on simultaneously on both sides of the pipe.

The backfill material for trenches and excavation made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk shall be according to Section 208. The backfill material shall be compacted to 85 percent of standard lab density by mechanical means.

All backfill material up to a height of 300 mm (1 ft) above the pipe shall be deposited in uniform layers not exceeding 200 mm (8 in.) thick, loose measurement. The material in each layer shall be compacted to the satisfaction of the Engineer by mechanical means. The

backfilling above this height shall be done according to Method 1, 2 or 3 as described below, with the following exceptions.

When trench backfill or excavated material meeting the requirements of Section 208 is required above the first 300 mm (1 ft) of the pipe, the layers shall not exceed 200 mm (8 in.). Gradations CA6 or CA10 shall not be used with Method 2 or Method 3.

Method 1. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be compacted to the satisfaction of the Engineer by mechanical means.

Method 2. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be either inundated or deposited in water.

Method 3. The trench shall be backfilled with loose material, and settlement secured by introducing water through holes jetted into the backfill to a point approximately 600 mm (2 ft) above the top of the pipe. The holes shall be spaced as directed by the Engineer but shall be no farther than 2 m (6 ft) apart.

The water shall be injected at a pressure just sufficient to sink the holes at a moderate rate of speed. The pressure shall be such that the water will not cut cavities in the backfill material nor overflow the surface. If water does overflow the surface, it shall be drained into the jetted holes by means of shallow trenches.

Water shall be injected as long as it will be absorbed by the backfill material and until samples taken from test holes in the trench show a satisfactory moisture content. The Contractor shall bore the test holes not more than 15 m (50 ft) apart and at such other locations in the trench designated by the Engineer. As soon as the watersoaking has been completed, all holes shall be filled with soil and compacted by ramming with a tool approved by the Engineer.

Backfill material which has been watersoaked shall be allowed to settle and dry for at least 10 days before any surface course or pavement is constructed on it. The length of time may be altered, if deemed desirable, by the Engineer. Where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk, the provisions of this paragraph shall also apply.

At the end of the settling and drying period, the crusted top of the backfill material shall be scarified and, if necessary, sufficient backfill material added, as specified in Method 1, to complete the backfilling operations.

The method used for backfilling and compacting the backfill material shall be the choice of the Contractor. If the method used does not produce results satisfactory to the Engineer, the Contractor will be required to alter or change the method being used so the resultant backfill will be satisfactory to the Engineer. Should the Contractor be required to alter or change the

method being used, no additional compensation will be allowed for altering or changing the method.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When sheeting and bracing have been used, sufficient bracing shall be left across the trench as the backfilling progresses to hold the sides firmly in place without caving or settlement. This bracing shall be removed as soon as practicable. Any depressions which may develop within the area involved in the construction operation due to settlement of the backfilling material shall be filled in a manner approved by the Engineer.

When the Contractor constructs the trench with sloped or benched sides according to Article 550.04, backfilling for the full width of the excavation shall be as specified, except no additional compensation will be allowed for trench backfill material required outside the vertical limits of the specified trench width.

Whenever excavation is made for installing sewer pipe across earth shoulders or private property, the topsoil disturbed by excavation operations shall be replaced as nearly as possible in its original position, and the whole area involved in the construction operations shall be left in a neat and presentable condition.

When using any PVC pipe, the pipe shall be backfilled with aggregate to 300 mm (1 ft) over the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means.

When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

Deflection Testing for Storm Sewers. All PVC storm sewers will be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted.

For PVC storm sewers with diameters 600 mm (24 in.) or smaller, a mandrel drag shall be used for deflection testing. For PVC storm sewers with diameters over 600 mm (24 in.), deflection measurements other than by a mandrel drag shall be used.

Where the mandrel is used, the mandrel shall be furnished by the Contractor and pulled by hand through the pipeline with a suitable rope or cable connected to each end. Winching or other means of forcing the deflection gauge through the pipeline will not be allowed.

The mandrel shall be of a shape similar to that of a true circle enabling the gauge to pass through a satisfactory pipeline with little or no resistance. The mandrel shall be of a design to prevent it from tipping from side to side and to prevent debris build-up from occurring between the channels of the adjacent fins or legs during operation. Each end of the core of the mandrel shall have fasteners to which the pulling cables can be attached. The mandrel shall have 9,

various sized fins or legs of appropriate dimension for various diameter pipes. Each fin or leg shall have a permanent marking that states its designated pipe size and percent of deflection allowable.

The outside diameter of the mandrel shall be 95 percent of the base inside diameter, where the base inside diameter is:

For all PVC pipe (as defined using ASTM D 3034 methodology):

If the pipe is found to have a deflection greater than specified, that pipe section shall be removed, replaced, and retested."

Revise subparagraph (c) of Article 1003.04 of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradation shall be as follows:

Backfill, bedding and trench backfill for pipe culverts and storm sewers .....	FA 1, FA 2, FA 6, or FA 21	
Porous granular embankment and backfill, french drains, and sand backfill for underdrains .....	FA 1, FA 2, or FA20 (Note 1)	

Note 1: For FA 1, FA 2, and FA 20 the percent passing the 75  $\mu$ m (No. 200) sieve shall be  $2 \pm 2$ ."

Revise the title of Article 1004.06 of the Standard Specifications to read:

**"Coarse Aggregate for Blotter, Embankment, Backfill, Trench Backfill, French Drains, and Bedding."**

Add the following to the end of subparagraph (c) of Article 1004.06 of the Standard Specifications:

"Backfill, bedding, and trench backfill for pipe culverts and storm sewers .....	CA 6, CA 10, and CA 18"	
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80051



## CONCRETE ADMIXTURES (BDE)

Effective: January 1, 2003

Revised: July 1, 2004

Revise Article 1020.05(b) of the Standard Specifications to read:

"(b) Admixtures. Except as specified, the use of admixtures to increase the workability or to accelerate the hardening of the concrete will be permitted only when approved in writing by the Engineer. The Department will maintain an Approved List of Concrete Admixtures. When the Department permits the use of a calcium chloride accelerator, it shall be according to Article 442.02, Note 5.

When the atmosphere or concrete temperature is 18 °C (65 °F) or higher, a retarding admixture meeting the requirements of Article 1021.03 shall be used in the Class BD Concrete and portland cement concrete bridge deck overlays. The amount of retarding admixture to be used will be determined by the Engineer. The proportions of the ingredients of the concrete shall be the same as without the retarding admixture except that the amount of mixing water shall be reduced, as may be necessary, in order to maintain the consistency of the concrete as required. In addition, a high range water-reducing admixture shall be used in Class BD Concrete. The amount of high range water-reducing admixture will be determined by the Engineer. At the option of the Contractor, a water-reducing admixture may be used. Type I cement shall be used.

For Class PC and PS Concrete, a retarding admixture may be added to the concrete mixture when the concrete temperature is 18 °C (65 °F) or higher. Other admixtures may be used when approved by the Engineer, or if specified by the contract. If an accelerating admixture is permitted by the Engineer, it shall be the non-chloride type.

At the Contractor's option, admixtures in addition to an air-entraining admixture may be used for Class PP-1 concrete. The accelerator shall be the non-chloride type. If a water-reducing or retarding admixture is used, the cement factor may be reduced a maximum 18 kg/cu m (0.30 hundredweight/cu yd). If a high range water-reducing admixture is used, the cement factor may be reduced a maximum 36 kg/cu m (0.60 hundredweight/cu yd). Cement factor reductions shall not be cumulative when using multiple admixtures. An accelerator shall always be added prior to a high range water-reducing admixture, if both are used.

If Class C fly ash or ground granulated blast-furnace slag is used in Class PP-1 concrete, a water-reducing or high range water-reducing admixture shall be used. However, the cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used. In addition, an accelerator shall not be used.

For Class PP-2 or PP-3 concrete, a non-chloride accelerator followed by a high range water-reducing admixture shall be used, in addition to the air-entraining admixture. For Class PP-3 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-2 or PP-3 concrete, the Contractor has the option to use a water-reducing admixture. A retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

When the air temperature is less than 13 °C (55 °F) for Class PP-1 or PP-2 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-4 concrete, a high range water-reducing admixture shall be used in addition to the air-entraining admixture. The Contractor has the option to use a water-reducing admixture. An accelerator shall not be used. For stationary or truck mixed concrete, a retarding admixture shall be used to allow for haul time. The Contractor has the option to use a mobile portland cement concrete plant according to Article 1103.04, but a retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

If the Department specifies a calcium chloride accelerator for Class PP-1 concrete, the maximum chloride dosage shall be 1.0 L (1.0 quart) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.0 L (2.0 quarts) per 45 kg (100 lb) of cement if approved by the Engineer. If the Department specifies a calcium chloride accelerator for Class PP-2 concrete, the maximum chloride dosage shall be 1.3 L (1.3 quarts) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.6 L (2.6 quarts) per 45 kg (100 lb) of cement if approved by the Engineer.

For Class PV, MS, SI, RR, SC and SH concrete, at the option of the Contractor, or when specified by the Engineer, a water-reducing admixture or a retarding admixture may be used. The amount of water-reducing admixture or retarding admixture permitted will be determined by the Engineer. The air-entraining admixture and other admixtures shall be added to the concrete separately, and shall be permitted to intermingle only after they have separately entered the concrete batch. The sequence, method and equipment for adding the admixtures shall be approved by the Engineer. The water-reducing admixture shall not delay the initial set of the concrete by more than one hour. Type I cement shall be used.

When a water-reducing admixture is added, a cement factor reduction of up to 18 kg/cu m (0.30 hundredweight/cu yd), from the concrete designed for a specific slump without the admixture, will be permitted for Class PV, MS, SI, RR, SC and SH concrete. When an approved high range water-reducing admixture is used, a cement factor reduction of up to 36 kg/cu m (0.60 hundredweight/cu yd), from a specific water cement/ratio without the admixture, will be permitted based on a 14 percent minimum water reduction. This is applicable to Class PV, MS, SI, RR, SC and SH concrete. A cement factor below 320 kg/cu m (5.35 hundredweight/cu yd) will not be permitted for Class PV, MS, SI, RR, SC and SH concrete. A cement factor reduction will not be

allowed for concrete placed underwater. Cement factor reductions shall not be cumulative when using multiple admixtures.

For use of admixtures to control concrete temperature, refer to Articles 1020.14(a) and 1020.14(b).

The maximum slumps given in Table 1 may be increased to 175 mm (7 in.) when a high range water-reducing admixture is used for all classes of concrete except Class PV and PP."

Revise Section 1021 of the Standard Specifications to read:

### **"SECTION 1021. CONCRETE ADMIXTURES**

**1021.01 General.** Admixtures shall be furnished in liquid form ready for use. The admixtures may be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer and trade name of the material. Containers shall be readily identifiable to the satisfaction of the Engineer as to manufacturer and trade name of the material they contain.

Prior to inclusion of a product on the Department's Approved List of Concrete Admixtures, the manufacturer shall submit a report prepared by an independent laboratory accredited by the AASHTO Accreditation Program. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications.

Tests shall be conducted using materials and methods specified on a "test" concrete and a "reference" concrete, together with a certification that no changes have been made in the formulation of the material since the performance of the tests. Per the manufacturer's option, the cement content for all required tests shall either be according to applicable specifications or 335 kg/cu m (5.65 cwt/cu yd). Compressive strength test results for six months and one year will not be required.

In addition to the report, the manufacturer shall submit AASHTO T 197 water content and set time test results on the standard cement used by the Department. The test and reference concrete mixture shall contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). The manufacturer may select their lab or an independent lab to perform this testing. The laboratory is not required to be accredited by the AASHTO Accreditation Program.

Prior to the approval of an admixture, the Engineer may conduct all or part of the applicable tests on a sample that is representative of the material to be furnished. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). For freeze-thaw testing, the Department will perform the test according to Illinois Modified AASHTO T 161, Procedure B.

The manufacturer shall include in the submittal the following information according to ASTM C 494; the average and manufacturing range of specific gravity, the average and manufacturing range of solids in the solution, and the average and manufacturing range of pH. The submittal shall also include an infrared spectrophotometer trace no more than five years old.

When test results are more than seven years old, the manufacturer shall re-submit the infrared spectrophotometer trace and the report prepared by an independent laboratory accredited by the AASHTO Accreditation Program.

All admixtures, except chloride-based accelerators, shall contain no more than 0.3 percent chloride by mass (weight).

**1021.02 Air-Entraining Admixtures.** Air-entraining admixtures shall conform to the requirements of AASHTO M 154.

If the manufacturer certifies that the air-entraining admixture is an aqueous solution of Vinsol resin that has been neutralized with sodium hydroxide (caustic soda), testing for compliance with the requirements may be waived by the Engineer. In the certification, the manufacturer shall show complete information with respect to the formulation of the solution, including the number of parts of Vinsol resin to each part of sodium hydroxide. Before the approval of its use is granted, the Engineer will test the solution for its air-entraining quality in comparison with a solution prepared and kept for that purpose.

**1021.03 Retarding and Water-Reducing Admixtures.** The admixture shall comply with the following requirements:

- (a) The retarding admixture shall comply with the requirements of AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).
- (b) The water-reducing admixture shall comply with the requirements of AASHTO M 194, Type A.
- (c) The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).

When a Type F or Type G high range water-reducing admixture is used, water-cement ratios shall be a minimum of 0.32.

Type F or Type G admixtures may be used, subject to the following restrictions:

For Class MS, SI, RR, SC and SH concrete, the water-cement ratio shall be a maximum of 0.44.

The Type F or Type G admixture shall be added at the jobsite unless otherwise directed by the Engineer. The initial slump shall be a minimum of 40 mm (1 1/2 in.)

prior to addition of the Type F or Type G admixture, except as approved by the Engineer.

When a Type F or Type G admixture is used, retempering with water or with a Type G admixture will not be allowed. An additional dosage of a Type F admixture, not to exceed 40 percent of the original dosage, may be used to retemper concrete once, provided set time is not unduly affected. A second retempering with a Type F admixture may be used for all classes of concrete except Class PP and SC, provided that the dosage does not exceed the dosage used for the first retempering, and provided that the set time is not unduly affected. No further retempering will be allowed.

Air tests shall be performed after the addition of the Type F or Type G admixture.

**1021.04 Set Accelerating Admixtures.** The admixture shall comply with the requirements of AASHTO M 194, Type C (accelerating) or Type E (water reducing and accelerating)"

80094

## CURING AND PROTECTION OF CONCRETE CONSTRUCTION (BDE)

Effective: January 1, 2004

Revise the second and third sentences of the eleventh paragraph of Article 503.06 of the Standard Specifications to read:

"Forms on substructure units shall remain in place at least 24 hours. The method of form removal shall not result in damage to the concrete."

Delete the twentieth paragraph of Article 503.22 of the Standard Specifications.

Revise the "Unit Price Adjustments" table of Article 503.22 of the Standard Specifications to read:

"UNIT PRICE ADJUSTMENTS"	
Type of Construction	Percent Adjustment in Unit Price
For concrete in substructures, culverts (having a waterway opening of more than 1 sq m (10 sq ft)), pump houses, and retaining walls (except concrete pilings, footings and foundation seals):	
When protected by: Protection Method II	115%
Protection Method I	110%
For concrete in superstructures:	
When protected by: Protection Method II	123%
Protection Method I	115%
For concrete in footings:	
When protected by: Protection Method I, II or III	107%
For concrete in slope walls:	
When protected by: Protection Method I	107% <sup>a</sup>

Delete the fourth paragraph of Article 504.05(a) of the Standard Specifications.

Revise the second and third sentences of the fifth paragraph of Article 504.05(a) of the Standard Specifications to read:

"All test specimens shall be cured with the units according to Article 1020.13."

Revise the first paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"Curing and Low Air Temperature Protection. The curing and protection for precast, prestressed concrete members shall be according to Article 1020.13 and this Article."

Revise the first sentence of the second paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“For curing, air vents shall be in place, and shall be so arranged that no water can enter the void tubes during the curing of the members.”

Revise the first sentence of the third paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“As soon as each member is finished, the concrete shall be covered with curing material according to Article 1020.13.”

Revise the eighth paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“The prestressing force shall not be transferred to any member before the concrete has attained the compressive strength of 28,000 kPa (4000 psi) or other higher compressive release strength specified on the plans, as determined from tests of 150 mm (6 in.) by 300 mm (12 in.) cylinders cured with the member according to Article 1020.13. Members shall not be shipped until 28-day strengths have been attained and members have a yard age of at least 4 days.”

Delete the third paragraph of Article 512.03(a) of the Standard Specifications.

Delete the last sentence of the second paragraph of Article 512.04(d) of the Standard Specifications.

Revise the "Index Table of Curing and Protection of Concrete Construction" table of Article 1020.13 of the Standard Specifications to read:

"INDEX TABLE OF CURING AND PROTECTION OF CONCRETE CONSTRUCTION"			
TYPE OF CONSTRUCTION	CURING METHODS	CURING PERIOD DAYS	LOW AIR TEMPERATURE PROTECTION METHODS
<b>Cast-in-Place Concrete:</b> <sup>11/</sup>			
Pavement			
Shoulder	1020.13(a)(1)(2)(3)(4)(5) <sup>3/5/</sup>	3	1020.13(c)
Base Course			
Base Course Widening	1020.13(a)(1)(2)(3)(4)(5) <sup>1/2/</sup>	3	1020.13(c)
Driveway			
Median			
Curb			
Gutter	1020.13(a)(1)(2)(3)(4)(5) <sup>4/5/</sup>	3	1020.13(c) <sup>16/</sup>
Curb and Gutter			
Sidewalk			
Slope Wall			
Paved Ditch			
Catch Basin			
Manhole	1020.13(a)(1)(2)(3)(4)(5) <sup>4/</sup>	3	1020.13(c)
Inlet			
Valve Vault			
Pavement Patching	1020.13(a)(1)(2)(3)(4)(5) <sup>2/</sup>	3 <sup>12/</sup>	1020.13(c)
Pavement Replacement	1020.13(a)(1)(2)(3)(4)(5) <sup>1/2/</sup>	3	442.06(h) and 1020.13(c)
Railroad Crossing	1020.13(a)(3)(5)	1	1020.13(c)
Piles	1020.13(a)(3)(5)	7	1020.13(e)(1)(2)(3)
Footings			
Foundation Seals	1020.13(a)(1)(2)(3)(4)(5) <sup>4/6/</sup>	7	1020.13(e)(1)(2)(3)
Substructure	1020.13(a)(1)(2)(3)(4)(5) <sup>17/</sup>	7	1020.13(e)(1)(2)(3)
Superstructure (except deck)	1020.13(a)(1)(2)(3)(5) <sup>8/</sup>	7	1020.13(e)(1)(2)
Deck	1020.13(a)(5)	7	1020.13(e)(1)(2) <sup>17/</sup>
Retaining Walls	1020.13(a)(1)(2)(3)(4)(5) <sup>17/</sup>	7	1020.13(e)(1)(2)
Pump Houses	1020.13(a)(1)(2)(3)(4)(5) <sup>1/</sup>	7	1020.13(e)(1)(2)
Culverts	1020.13(a)(1)(2)(3)(4)(5) <sup>4/6/</sup>	7	1020.13(e)(1)(2) <sup>18/</sup>
Other Incidental Concrete	1020.13(a)(1)(2)(3)(5)	3	1020.13(c)
<b>Precast Concrete:</b> <sup>11/</sup>			
Bridge Beams			
Piles			
Bridge Slabs	1020.13(a)(3)(5) <sup>9/10/</sup>	As required.	<sup>13/</sup> 504.06(c)(6), 1020.13(e)(2) <sup>19/</sup>
Nelson Type Structural Member			
All Other Precast Items	1020.13(a)(3)(4)(5) <sup>29/10/</sup>	As required.	<sup>14/</sup> 504.06(c)(6), 1020.13(e)(2) <sup>19/</sup>
<b>Precast, Prestressed Concrete:</b> <sup>11/</sup>			
All Items	1020.13(a)(3)(5) <sup>9/10/</sup>	Until strand tensioning is released. <sup>15/</sup>	504.06(c)(6), 1020.13(e)(2) <sup>19/</sup>



Notes-General:

- 1/ Type I, membrane curing only
- 2/ Type II, membrane curing only
- 3/ Type III, membrane curing only
- 4/ Type I, II and III membrane curing
- 5/ Membrane curing will not be permitted between November 1 and April 15.
- 6/ The use of water to inundate footings, foundation seals or the bottom slab of culverts is permissible when approved by the Engineer, provided the water temperature can be maintained at 7 °C ( 45 °F) or higher.
- 7/ Asphalt Emulsion for Waterproofing may be used in lieu of other curing methods when specified and permitted according to Article 503.18.
- 8/ On non-traffic surfaces which receive protective coat according to Article 503.19, a linseed oil emulsion curing compound may be used as a substitute for protective coat and other curing methods. The linseed emulsion curing compound will be permitted between April 16 and October 31 of the same year, provided it is applied with a mechanical sprayer according to Article 1101.09 (b), and meets the material requirements of Article 1022.07.
- 9/ Steam curing (heat and moisture) is acceptable and shall be accomplished by the method specified in Article 504.06(c)(6).
- 10/ A moist room according to AASHTO M 201 is acceptable for curing.
- 11/ If curing is required and interrupted because of form removal for cast-in-place concrete items, precast concrete products, or precast prestressed concrete products, the curing shall be resumed within two hours from the start of the form removal.
- 12/ Curing maintained only until opening strength is attained, with a maximum curing period of three days.
- 13/ The curing period shall end when the concrete has attained the mix design strength. The producer has the option to discontinue curing when the concrete has attained 80 percent of the mix design strength or after seven days. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.
- 14/ The producer shall determine the curing period or may elect to not cure the product. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.
- 15/ The producer has the option to continue curing after strand release.
- 16/ When structural steel or structural concrete is in place above slope wall, Article 1020.13(c) shall not apply. The protection method shall be according to Article 1020.13(e)(1).
- 17/ When Article 1020.13(e)(2) is used to protect the deck, the housing may enclose only the bottom and sides. The top surface shall be protected according to Article 1020.13(e)(1).
- 18/ For culverts having a waterway opening of 1 sq m (10 sq ft) or less, the culverts may be protected according to Article 1020.13(e)(3).
- 19/ The seven day protection period in the first paragraph of Article 1020.13(e)(2) shall not apply. The protection period shall end when curing is finished. For the third paragraph of Article 1020.13(e)(2), the decrease in temperature shall be according to Article 504.06(c)(6)."

Add the following to Article 1020.13(a) of the Standard Specifications:

"(5) Wetted Cotton Mat Method. After the surface of concrete has been textured or finished, it shall be covered immediately with dry cotton mats. The cotton mats shall be placed in a manner which will not mar the concrete surface. A texture resulting from the cotton mat material is acceptable. The cotton mats shall then be wetted immediately and thoroughly soaked with a gentle spray of water. For bridge decks, a foot bridge shall be used to place and wet the cotton mats.

The cotton mats shall be maintained in a wetted condition until the concrete has hardened sufficiently to place soaker hoses without marring the concrete surface. The soaker hoses shall be placed on top of the cotton mats at a maximum 1.2 m (4 ft) spacing. The cotton mats shall be kept wet with a continuous supply of water for the remainder of the curing period. Other continuous wetting systems may be used if approved by the Engineer.

After placement of the soaker hoses, the cotton mats shall be covered with white polyethylene sheeting or burlap-polyethylene blankets.

For construction items other than bridge decks, soaker hoses or a continuous wetting system will not be required if the alternative method keeps the cotton mats wet. Periodic wetting of the cotton mats is acceptable.

For areas inaccessible to the cotton mats on bridge decks, curing shall be according to Article 1020.13(a)(3)."

Revise the first paragraph of Article 1020.13(c) of the Standard Specifications to read:

"Protection of Portland Cement Concrete, Other Than Structures, From Low Air Temperatures. When the official National Weather Service forecast for the construction area predicts a low of 0 °C (32 °F), or lower, or if the actual temperature drops to 0 °C (32 °F), or lower, concrete less than 72 hours old shall be provided at least the following protection:"

Delete Article 1020.13(d) and Articles 1020.13(d)(1),(2),(3),(4) of the Standard Specifications.

Revise the first five paragraphs of Article 1020.13(e) of the Standard Specifications to read:

"Protection of Portland Cement Concrete Structures From Low Air Temperatures. When the official National Weather Service Forecast for the construction area predicts a low below 7 °C (45 °F), or if the actual temperature drops below 7 °C (45 °F), concrete less than 72 hours old shall be provided protection. Concrete shall also be provided protection when placed during the winter period of December 1 through March 15. Concrete shall not be placed until the materials, facilities and equipment for protection are approved by the Engineer.

When directed by the Engineer, the Contractor may be required to place concrete during the winter period. If winter construction is specified, the Contractor shall proceed with the construction, including concrete, excavation, pile driving, steel erection and all appurtenant work required for the complete construction of the item, except at times when weather conditions make such operations impracticable.

Regardless of the precautions taken, the Contractor shall be responsible for protection of the concrete placed and any concrete damaged by cold temperatures shall be removed and replaced by the Contractor at his/her own expense."

Add the following at the end of the third paragraph of Article 1020.13(e)(1) of the Standard Specifications:

"The Contractor shall provide means for checking the temperature of the surface of the concrete during the protection period."

Revise the second sentence of the first paragraph of Article 1020.13(e)(2) of the Standard Specifications to read:

"The Contractor shall provide means for checking the temperature of the surface of the concrete or air temperature within the housing during the protection period."

Delete the last sentence of the first paragraph of Article 1020.13(e)(3) of the Standard Specifications.

Add the following Article to Section 1022 of the Standard Specifications:

**"1022.06 Cotton Mats.** Cotton mats shall consist of a cotton fill material, minimum 400 g/sq m (11.8 oz/sq yd), covered with unsized cloth or burlap, minimum 200 g/sq m (5.9 oz/sq yd), and be tufted or stitched to maintain stability.

Cotton mats shall be in a condition satisfactory to the Engineer. Any tears or holes in the mats shall be repaired.

Add the following Article to Section 1022 of the Standard Specifications:

**"1022.07 Linseed Oil Emulsion Curing Compound.** Linseed oil emulsion curing compound shall be composed of a blend of boiled linseed oil and high viscosity, heavy bodied linseed oil emulsified in a water solution. The curing compound shall meet the requirements of a Type I, II, or III according to Article 1022.01, except the drying time requirement will be waived. The oil phase shall be  $50 \pm 4$  percent by volume. The oil phase shall consist of 80 percent by mass (weight) boiled linseed oil and 20 percent by mass (weight) Z-8 viscosity linseed oil. The water phase shall be  $50 \pm 4$  percent by volume."

Revise Article 1020.14 of the Standard Specifications to read:

**"1020.14 Temperature Control for Placement.** Temperature control for concrete placement shall conform to the following requirements:

- (a) Temperature Control other than Structures. The temperature of concrete immediately before placing, shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

Plastic concrete temperatures up to 35 °C (96 °F), as placed, may be permitted provided job site conditions permit placement and finishing without excessive use of water on and/or overworking of the surface. The occurrence within 24 hours of unusual surface distress shall be cause to revert to a maximum 32 °C (90 °F) plastic concrete temperature.

Concrete shall not be placed when the air temperature is below 5 °C (40 °F) and falling or below 2 °C (35 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

For pavement patching, refer to Article 442.06(e) for additional information on temperature control for placement.

- (b) Temperature Control for Structures. The temperature of concrete as placed in the forms shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits. When insulated forms are used, the temperature of the concrete mixture shall not exceed 25 °C (80 °F). If the Engineer determines that heat of hydration might cause excessive temperatures in the concrete, the concrete shall be placed at a temperature between 10 °C (50 °F) and 15 °C (60 °F), per the Engineer's instructions. When concrete is placed in contact with previously placed concrete, the temperature of the concrete may be increased as required to offset anticipated heat loss.

Concrete shall not be placed when the air temperature is below 7 °C (45 °F) and falling or below 4 °C (40 °F), without permission of the Engineer. When placing of concrete is

authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

- (c) Temperature. The concrete temperature shall be determined according to ASTM C 1064."

80114

## DETECTABLE WARNINGS (BDE)

Effective: August 1, 2005

Replace Articles 424.08 – 424.12 of the Standard Specifications with the following:

**424.08 Curb Ramps.** Curb ramps shall be constructed according to the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Illinois Accessibility Code, and as shown on the plans.

Curb ramps shall be constructed to the same thickness as the adjacent sidewalk with a minimum thickness of 100 mm (4 in.).

**424.09 Detectable Warnings.** Detectable warnings shall consist of a surface of truncated domes meeting the requirements of the ADAAG and the details shown on the plans.

Detectable warnings shall be installed at curb ramps, medians and pedestrian refuge islands, at-grade railroad crossings, transit platform edges, and other locations where pedestrians are required to cross a hazardous vehicular way. Detectable warnings shall also be installed at alleys and commercial entrances when permanent traffic control devices are present. The installation shall be an integral part of the walking surface and only the actual domes shall project above the walking surface.

The product or method used for installing detectable warnings shall come with the following documents which shall be given to the Engineer prior to use.

- (a) Manufacturer's certification stating the product is fully compliant with the ADAAG.
- (b) Manufacturer's five year warranty.
- (c) Manufacturer's specifications stating the required materials, equipment, and installation procedures.

Products that are colored shall be colored their entire thickness.

The materials, equipment, and installation procedures used shall be according to the manufacturer's specifications.

**424.10 Backfill.** After the concrete has been cured, the spaces along the edges of the sidewalk and ramps shall be backfilled with approved material. The material shall be compacted until firm and the surface neatly graded.

**424.11 Disposal of Surplus Material.** Surplus or waste material shall be disposed of according to Article 202.03.

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

Detectable warnings will be measured for payment in place and the area computed in square meters (square feet).

Earth excavation will be measured for payment according to Article 202.07.

**424.13 Basis of Payment.** This work will be paid for at the contract unit price per square meter (square foot) for PORTLAND CEMENT CONCRETE SIDEWALK, of the thickness specified.

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

Earth excavation will be paid for according to Article 202.08."

80146

## DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000

Revised: June 1, 2004

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. 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. 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.

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 federally-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

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 15 % 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.state.il.us](http://www.dot.state.il.us).

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 nonresponsive.

- (a) In order to assure the timely award of the contract, the as-read low bidder must submit a Disadvantaged Business Utilization Plan on Department form SBE 2026 within seven (7) working days after the date of letting. To meet the seven (7) day requirement, the bidder may send the Plan by certified mail or delivery service within the seven (7) 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 as-read low bidder to ensure that the postmark or receipt date is affixed within the seven (7) 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 (7) day submittal requirement, and the bid will be declared nonresponsive. In the event the bid is declared nonresponsive 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 (5) 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% 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% 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% 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% 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% goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
  - (2) 100% goal credit for the cost of materials or supplies obtained from a DBE manufacturer.
  - (3) 100% 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 prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors 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 contractor'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 contractor'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 Contractor 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 (5) 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 (5) 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 (10) 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 nonresponsive.

**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 (30) calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Report on Department form SBE 2115 to the District 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.

80029

## **EROSION AND SEDIMENT CONTROL DEFICIENCY DEDUCTION (BDE)**

Effective: August 1, 2001

Revised: November 1, 2001

When the Engineer is notified or determines an erosion and/or sediment control deficiency(s) exists, he/she will direct the Contractor in writing to correct the deficiency. The Contractor shall then correct the deficiency within 24 hours. The 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.

If the Contractor fails to correct the deficiency(s) within 24 hours, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The time period will begin with the initial written notification to the Contractor and end with the Engineer's acceptance of the corrected work. The per calendar day deduction will be either \$1000.00 or 0.05 percent of the awarded contract value, whichever is greater.

If the Contractor fails to respond, the Engineer may correct the deficiencies and deduct the cost from monies due or which may become due the Contractor. This corrective action shall in no way relieve the Contractor of his/her contractual requirements or responsibilities.

80055



## **EXPANSION JOINTS (BDE)**

Effective: August 1, 2003

Add the following paragraph after the second paragraph of Article 420.10(e) of the Standard Specifications:

"After the dowel bars are oiled, plastic expansion caps shall be secured to the bars maintaining a minimum expansion gap of 50 mm (2 in.) between the end of the bar and the end of the cap. The caps shall fit snugly on the bar and the closed end shall be watertight. For expansion joints formed using dowel bar basket assemblies, the caps shall be installed on the alternating free ends of the bars. For expansion joints formed using a construction header, the caps shall be installed on the exposed end of each bar once the header has been removed and the joint filler material has been installed."

80103

## **FLAGGER VESTS (BDE)**

Effective: April 1, 2003

Revised: August 1, 2005

Revise the first sentence of Article 701.04(c)(1) of the Standard Specifications to read:

"The flagger shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments and approved flagger traffic control signs conforming to Standard 702001 and Article 702.05(e)."

Revise Article 701.04(c)(6) of the Standard Specifications to read:

"(6) Nighttime Flagging. Flaggers shall be illuminated by an overhead light source providing a minimum vertical illuminance of 108 lux (10 fc) measured 300 mm (1 ft) out from the flagger's chest. The bottom of any luminaire shall be a minimum of 3 m (10 ft) above the pavement. Luminaire(s) shall be shielded to minimize glare to approaching traffic and trespass light to adjoining properties.

The flagger vest shall be a fluorescent orange or fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 3 garments."

80101

**FREEZE-THAW RATING (BDE)**

Effective: November 1, 2002

Revise the first sentence of Article 1004.02(f) of the Standard Specifications to read:

“When coarse aggregate is used to produce portland cement concrete for base course, base course widening, pavement, driveway pavement, sidewalk, shoulders, curb, gutter, combination curb and gutter, median, paved ditch or their repair using concrete, the gradation permitted will be determined from the results of the Department’s Freeze-Thaw Test.”

80079

## FURNISHED EXCAVATION (BDE)

Effective: August 1, 2002

Revised: November 1, 2004

Revise Article 204.01 of the Standard Specifications to read:

**Description.** Borrow excavation and furnished excavation shall consist of excavating suitable materials obtained from locations approved by the Engineer and transporting the materials to various locations throughout the limits of the contract."

Revise Article 204.07(b) of the Standard Specifications to read:

(b) Measured Quantities. Furnished excavation will be computed for payment in cubic meters (cubic yards) as follows:

Furnished Excavation = Embankment - [Suitable Excavation x (1 - Shrinkage Factor)]

Where:

Embankment = the volume of fill in its final position computed by the method of average end areas and based upon the existing ground line as shown on the plans except as noted in (1) and (2) below;

Suitable Excavation = earth excavation, rock excavation, and other on-site excavation suitable for use in embankments as shown in the Earthwork Schedule on the plans;

Shrinkage Factor = 0.25 unless otherwise shown on the plans.

(1) If the Contractor so requests, the Engineer will reestablish the existing ground line after the clearing and tree removal have been performed according to Section 201 and the top 150 mm (6 in.) of the existing ground surface has been disked and compacted to the satisfaction of the Engineer.

(2) If settlement platforms are erected, the Engineer will reestablish the existing ground line after the embankment is complete as specified in Article 204.07(a)(2).

Furnished excavation placed in excess of that required for the execution of the contract will not be measured for payment."

Add the following paragraph to the end of Article 204.07 of the Standard Specifications:

"The quantity for furnished excavation will not be recalculated when surplus, suitable materials are utilized in embankments according to Article 202.03."

80072

**HAND VIBRATOR (BDE)**

Effective: November 1, 2003

Add the following paragraph to Article 1103.17(a) of the Standard Specifications:

"The vibrator shall have a non-metallic head for areas containing epoxy coated reinforcement. The head shall be coated by the manufacturer. The hardness of the non-metallic head shall be less than the epoxy coated reinforcement, resulting in no damage to the epoxy coating. Slip-on covers will not be allowed."

80054

## **PARTIAL PAYMENTS (BDE)**

Effective: September 1, 2003

Revise Article 109.07 of the Standard Specifications to read:

**"109.07 Partial Payments.** Partial payments will be made as follows:

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

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved. Furthermore, progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

- (b) **Material Allowances.** At the discretion of the Department, payment may be made for materials, prior to their use in the work, when satisfactory evidence is presented by the Contractor. Satisfactory evidence includes justification for the allowance (to expedite the work, meet project schedules, regional or national material shortages, etc.), documentation of material and transportation costs, and evidence that such material is properly stored on the project or at a secure location acceptable and accessible to the Department.

Material allowances will be considered only for nonperishable materials when the cost, including transportation, exceeds \$10,000 and such materials are not expected to be utilized within 60 days of the request for the allowance. For contracts valued under \$500,000, the minimum \$10,000 requirement may be met by combining the principal (material) product of no more than two contract items. An exception to this two item limitation may be considered for any contract regardless of value for items in which material (products) are similar except for type and/or size.

Material allowances shall not exceed the value of the contract items in which used and shall not include the cost of installation or related markups. Amounts paid by the Department for material allowances will be deducted from estimates due the Contractor as the material is used. Two-sided copies of the Contractor's cancelled checks for materials and transportation must be furnished to the Department within 60 days of payment of the allowances or the amounts will be reclaimed by the Department."

## **PAYMENTS TO SUBCONTRACTORS (BDE)**

Effective: June 1, 2000

Revised: September 1, 2003

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 no later than 30 days from the receipt of each payment made to the Contractor.

State law addresses the timing of payments to be made to subcontractors. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, generally requires that when a Contractor receives any payment from the Department, the Contractor is required to make corresponding, proportional payments to each subcontractor performing work within 15 calendar days after receipt of the state payment. Section 7 of the State Prompt Payment Act further provides that interest in the amount of 2% per month, in addition to the payment due, shall be paid to any subcontractor 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 throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

As progress payments are made to the Contractor in accordance with Article 109.07 of the Standard Specifications for Road and Bridge Construction, the Contractor shall make a corresponding partial payment within 15 calendar days to each subcontractor in proportion to the work satisfactorily completed by each subcontractor. The proportionate amount of partial payment due to each subcontractor 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 shall be paid in full within 15 calendar days after the subcontractor's work has been satisfactorily completed. The Contractor shall hold no retainage from the subcontractors.

This Special Provision does not create any rights in favor of any subcontractor against the State of Illinois or authorize any cause of action against the State of Illinois on account of any payment, nonpayment, delayed payment or interest claimed by application of the State Prompt Payment Act. The Department will neither determine the reasonableness of any cause for delay of payment nor enforce any claim to payment, including interest. Moreover, the Department will not approve any delay or postponement of the 15 day requirement. State law creates 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 in accordance with the Public Construction Bond Act, 30 ILCS 550.

80022

## **PERSONAL PROTECTIVE EQUIPMENT (BDE)**

Effective: July 1, 2004

All personnel, excluding flaggers, working outside of a vehicle (car or truck) within 7.6 m (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 the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments. Other types of garments may be substituted for the vest as long as the garments have manufacturers tags identifying them as meeting the ANSI Class 2 requirement.

80130



## **PORTABLE CHANGEABLE MESSAGE SIGNS (BDE)**

Effective: November 1, 1993

Revised: April 2, 2004

Description. This work shall consist of furnishing, placing, and maintaining changeable message sign(s) at the location(s) shown on the plans or as directed by the Engineer.

The sign(s) shall be trailer mounted. The message panel shall be at least 2.1 m (7 ft) above the pavement, present a level appearance, and be capable of displaying up to eight characters in each of three lines at a time. Character height shall be 450 mm (18 in.).

The message panel shall be of either a bulb matrix or disc matrix design controlled by an onboard computer capable of storing a minimum of 99 programmed messages for instant recall. The computer shall be capable of being programmed to accept messages created by the operator via an alpha-numeric keyboard and able to flash any six messages in sequence. The message panel shall also be capable of being controlled by a computer from a remote location via a cellular linkage. The Contractor shall supply the modem, the cellular phone, and the necessary software to run the sign from a remote computer at a location designated by the Engineer. The Contractor shall promptly program and/or reprogram the computer to provide the messages as directed by the Engineer.

The message panel shall be visible from 400 m (1/4 mile) under both day and night conditions. The letters shall be legible from 250 m (750 ft).

The sign shall include automatic dimming for nighttime operation and a power supply capable of providing 24 hours of uninterrupted service.

The Contractor shall provide all preventive maintenance efforts s(he) deems necessary to achieve uninterrupted service. If service is interrupted for any cause and not restored within 24 hours, the Engineer will cause such work to be performed as may be necessary to provide this service. The cost of such work shall be borne by the Contractor or deducted from current or future compensation due the Contractor.

When the sign(s) are displaying messages, they shall be considered a traffic control device. At all times when no message is displayed, they shall be considered equipment.

Basis of Payment. When portable changeable message signs are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard.

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

80124

**PORTLAND CEMENT (BDE)**

Effective: January 1, 2005

Replace the first sentence of the second paragraph of Article 1001.01 of the Standard Specifications with the following:

“For portland cement according to ASTM C 150, the addition of up to 5.0 percent limestone by mass (weight) to the cement will not be permitted. Also, the total of all organic processing additions shall not exceed 1.0 percent by mass (weight) of the cement and the total of all inorganic processing additions shall not exceed 4.0 percent by mass (weight) of the cement.”

80139

**PORTLAND CEMENT CONCRETE (BDE)**

Effective: November 1, 2002

Add the following paragraph after the fourth paragraph of Article 1103.01(b) of the Standard Specifications:

"The truck mixer shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Add the following paragraph after the first paragraph of Article 1103.01(c) of the Standard Specifications:

"The truck agitator shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Add the following paragraph after the first paragraph of Article 1103.01(d) of the Standard Specifications:

"The nonagitator truck shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Revise the first sentence of the first paragraph of Article 1103.02 of the Standard Specifications to read:

"The plant shall be approved before production begins according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

80083

## **PRECAST CONCRETE PRODUCTS (BDE)**

Effective: July 1, 1999

Revised: November 1, 2004

Product Approval. Precast concrete products shall be produced according to the Department's current Policy Memorandum, "Quality Control/Quality Assurance Program for Precast Concrete Products". The Policy Memorandum applies to precast concrete products listed under the Products Key of the "Approved List of Certified Precast Concrete Producers".

Precast Concrete Box Culverts. Add the following sentence to the end of the fourth paragraph of Article 540.06:

"After installation, the interior and exterior joint gap between precast concrete box culvert sections shall not exceed 38 mm (1 1/2 in.)."

Portland Cement Replacement. For precast concrete products using Class PC concrete or other mixtures, portland cement replacement with fly ash or ground granulated blast-furnace (GGBF) slag shall be governed by the AASHTO or ASTM standard specification referenced in the Standard Specifications.

For all other precast concrete products using Class PC concrete or other mixtures, portland cement replacement with fly ash or GGBF slag shall be approved by the Engineer. Class F fly ash shall not exceed 15 percent by mass (weight) of the total portland cement and Class F fly ash. Class C fly ash shall not exceed 20 percent by mass (weight) of the total portland cement and Class C fly ash. GGBF slag shall not exceed 25 percent by mass (weight) of the total portland cement and GGBF slag.

Concrete mix designs, for precast concrete products, shall not consist of portland cement, fly ash and GGBF slag.

Ready-Mixed Concrete. Delete the last paragraph of Article 1020.11(a) of the Standard Specifications.

Shipping. When a precast concrete product has attained the specified strength, the earliest the product may be loaded, shipped, and used is on the fifth calendar day. The first calendar day shall be the date casting was completed.

Acceptance. Products which have been lot or piece inspected and approved by the Department prior to July 1, 1999, will be accepted for use on this contract.

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**PREFORMED RECYCLED RUBBER JOINT FILLER (BDE)**

Effective: November 1, 2002

Revise Article 503.02(c) of the Standard Specifications to read:

“(c) Preformed Expansion Joint Filler .....1051”

Revise Article 637.02(d) of the Standard Specifications to read:

“(d) Preformed Expansion Joint Filler .....1051”

Add the following Article to Section 1051 of the Standard Specifications:

“1051.10 Preformed Recycled Rubber Joint Filler. Preformed recycled rubber joint filler shall consist of ground tire rubber, free of steel and fabric, combined with ground scrap or waste polyethylene. It shall not have a strong hydrocarbon or rancid odor and shall meet the physical property requirements of ASTM D 1752. Water absorption by volume shall not exceed 5.0 percent.”

80084

## RAP FOR USE IN BITUMINOUS CONCRETE MIXTURES (BDE)

Effective: January 1, 2000

Revised: April 1, 2002

Revise Article 1004.07 to read:

**"1004.07 RAP Materials.** RAP is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded hot-mix asphalt pavement. RAP must originate from routes or airfields under federal, state or local agency jurisdiction. The Contractor shall supply documentation that the RAP meets these requirements.

- (a) Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP will be allowed on top of the pile after the pile has been sealed.
- (1) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only and represent the same aggregate quality, but shall be at least C quality or better, the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag), similar gradation and similar AC 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. Homogenous stockpiles shall meet the requirements of Article 1004.07(d). Homogeneous RAP stockpiles not meeting these requirements may be processed (crushing and screening) and retested.
  - (2) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only. The coarse aggregate in this RAP shall be crushed aggregate only and may represent more than one aggregate type and/or quality but shall be at least C quality or better. This RAP may have an inconsistent gradation and/or asphalt cement content prior to processing. All conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 16 mm (5/8 in.) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate RAP stockpiles shall meet the requirements of Article 1004.07(d).
  - (3) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP containing coarse aggregate (crushed or round) that is at least D quality or better. This RAP may have an inconsistent gradation and/or asphalt content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate DQ RAP shall meet the requirements of Article 1004.07(d).

Reclaimed Superpave Low ESAL IL-9.5L surface mixtures shall only be placed in conglomerate DQ RAP stockpiles due to the potential for rounded aggregate.

- (4) Other. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Other". "Other" RAP stockpiles shall not be used in any of the Department's bituminous mixtures.
- (b) Use. The allowable use of a RAP stockpile shall be set by the lowest quality of coarse aggregate in the RAP stockpile. Class I/Superpave surface mixtures are designated as containing Class B quality coarse aggregate only. Superpave Low ESAL IL-19.0L binder and IL-9.5L surface mixtures are designated as Class C quality coarse aggregate only. Class I/Superpave binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate only. Bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate only. Any mixture not listed above shall have the designated quality determined by the Department.

RAP containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in Class I/Superpave (including Low ESAL) surface mixtures only. RAP stockpiles for use in Class I/Superpave mixtures (including Low ESAL), base course, base course widening and Class B mixtures shall be either homogeneous or conglomerate RAP stockpiles except conglomerate RAP stockpiles shall not be used in Superpave surface mixture Ndesign 50 or greater. RAP for use in bituminous aggregate mixtures (BAM) shoulders and BAM stabilized subbase shall be from homogeneous, conglomerate, or conglomerate DQ stockpiles.

Additionally, RAP used in Class I/Superpave surface mixtures shall originate from milled or crushed mixtures only, in which the coarse aggregate is of Class B quality or better. RAP stockpiles for use in Class I/Superpave (including Low ESAL) binder mixes as well as base course, base course widening and Class B mixtures shall originate from milled or processed surface mixture, binder mixture, or a combination of both mixtures uniformly blended to the satisfaction of the Engineer, in which the coarse aggregate is of Class C quality or better.

- (c) Contaminants. RAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.
- (d) Testing. All 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 450 metric tons (500 tons) for the first 1800 metric tons (2,000 tons) and one sample per 1800 metric tons (2,000 tons) thereafter. A minimum of five tests shall be required for stockpiles less than 3600 metric tons (4,000 tons).

For testing existing stockpiles, 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 extract representative samples throughout the pile for testing.

Before extraction, each field sample shall be split to 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.

All of the extraction results shall be compiled and averaged for asphalt content and gradation. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	Homogeneous / Conglomerate	Conglomerate "D" Quality
25 mm (1 in.)		± 5%
12.5 mm (1/2 in.)	± 8%	± 15%
4.75 mm (No. 4)	± 6%	± 13%
2.36 mm (No. 8)	± 5%	
1.18 mm (No. 16)		± 15%
600 µm (No. 30)	± 5%	
75 µm (No. 200)	± 2.0%	± 4.0%
AC	± 0.4%	± 0.5%

If more than 20 percent of the individual sieves are out of the gradation tolerances, or if more than 20 percent of the asphalt content test results fall outside the appropriate tolerances, the RAP will not be allowed to be used in the Department's bituminous concrete mixtures unless the RAP representing the failing tests is removed from the stockpile to the satisfaction of the Engineer. 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)".

- (e) Designs. At the Contractor's option, bituminous concrete mixtures may be constructed utilizing RAP material meeting the above detailed requirements. The amount of RAP included in the mixture shall not exceed the percentages specified in the plans.

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 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.

- (f) Production. The coarse aggregate in all RAP used shall be equal to or less than the nominal maximum size requirement for the bituminous 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.

80011

**SEEDING AND SODDING (BDE)**

Effective: July 1, 2004

Revised: August 1, 2005

Revise Class 1A and 2A seeding mixtures shown in Table 1 of Article 250.07 of the Standard Specifications to read:

"Table 1 - SEEDING MIXTURES		
Class – Type	Seeds	kg/hectare (lb/acre)
1A Salt Tolerant Lawn Mixture 7/	Bluegrass	70 (60)
	Perennial Ryegrass	20 (20)
	Audubon Red Fescue	20 (20)
	Rescue 911 Hard Fescue	20 (20)
	Fults Salt Grass*	70 (60)
2A Salt Tolerant Roadside Mixture 7/	Alta Fescue or Ky 31	70 (60)
	Perennial Ryegrass	20 (20)
	Audubon Red Fescue	20 (30)
	Rescue 911 Hard Fescue	20 (30)
	Fults Salt Grass 1/	70 (60)"

Revise Note 7 of Article 250.07 of the Standard Specifications to read:

"Note 7. In Districts 1 through 6, the planting times shall be April 1 to June 15 and August 1 to November 1. In Districts 7 through 9, the planting times shall be March 1 to June 1 and August 1 to November 15. Seeding may be performed outside these dates provided the Contractor guarantees a minimum of 75 percent uniform growth over the entire seeded area(s) after one growing season. The guarantee shall be submitted to the Engineer in writing prior to performing the work. After one growing season, areas not sustaining 75 percent uniform growth shall be interseeded or reseeded, as determined by the Engineer, at the Contractor's expense."

Add the following sentence to Article 252.04 of the Standard Specifications:

"Sod shall not be placed during the months of July and August."

Revise the first paragraph of Article 252.08 of the Standard Specifications to read:

**252.08 Sod Watering.** Within two hours after the sod has been placed, water shall be applied at a rate of 25 L/sq m (5 gal/sq yd). Additional water shall be applied every other day at a rate of 15 L/sq m (3 gal/sq yd) for a total of 15 additional waterings. During periods exceeding 26 °C (80 °F) or subnormal rainfall, the schedule of additional waterings may be altered with the approval of the Engineer."

Revise Article 252.09 of the Standard Specifications to read:

**252.09 Supplemental Watering.** During periods exceeding 26 °C (80 °F) or subnormal rainfall, supplemental watering may be required after the initial and additional waterings. Supplemental watering shall be performed when directed by the Engineer. Water shall be applied at the rate specified by the Engineer within 24 hours of notice."

Revise the first and third paragraphs of Article 252.12 of the Standard Specifications to read:

**252.12 Method of Measurement.** Sodding will be measured for payment in place and the area computed in square meters (square yards). To be acceptable for final payment, the sod shall be growing in place for a minimum of 30 days in a live, healthy condition. When directed by the Engineer, any defective or unacceptable sod shall be removed, replaced and watered by the Contractor at his/her own expense."

"Supplemental watering will be measured for payment in units of 1000 L (1000 gal) of water applied on the sodded areas. Waterings performed in addition to those required by Article 252.08 or after the 30 day establishment period will be considered as supplemental watering."

Replace the first paragraph of Article 252.13 of the Standard Specifications with the following:

**252.13 Basis of Payment.** Sodding will be paid for at the contract unit price per square meter (square yard) for SODDING or SODDING, SALT TOLERANT according to the following schedule.

- (a) Initial Payment. Upon placement of sod, 25 percent of the pay item will be paid.
- (b) Final Payment. Upon acceptance of sod, the remaining 75 percent of the pay item will be paid."

Revise Article 1081.03(b) of the Standard Specifications to read:

"(b) Salt Tolerant Sod.

Variety	Percent by Weight
Buffalo Grass	30%
Buchloe Dactyloides	
Amigo Fineleaf Tall Fescue	20%
Audubon Red Fescue	15%
Rescue 911 Hard Fescue	15%
Rugby Kentucky Bluegrass	5%
Fults Pucinnellia Distans	15%

Revise Table II of Article 1081.04(c)(6) of the Standard Specifications to read:

TABLE II						
Variety of Seeds	Hard Seed Percent Maximum	Purity Percent Minimum	Pure, Live Seed Percent Minimum	Weed Percent Maximum	Secondary Noxious Weeds No. per kg (oz) Max. Permitted*	Remarks
Alfalfa	20	92	89	0.50	211 (6)	1/
Brome Grass	-	90	75	0.50	175 (5)	-
Clover, Alsike	15	92	87	0.30	211 (6)	2/
Clover, Crimson	15	92	83	0.50	211 (6)	-
Clover, Ladino	15	92	87	0.30	211 (6)	-
Clover, Red	20	92	87	0.30	211 (6)	-
Clover, White Dutch	30	92	87	0.30	211 (6)	3/
Audubon Red Fescue	0	97	82	0.10	105 (3)	-
Fescue, Alta or Ky. 31	-	97	82	1.00	105 (3)	-
Fescue, Creeping Red	-	97	82	1.00	105 (3)	-
Fults Salt Grass	0	98	85	0.10	70 (2)	-
Kentucky Bluegrass	-	97	80	0.30	247 (7)	5/
Lespedeza, Korean	20	92	84	0.50	211 (6)	3/
Oats	-	92	88	0.50	70 (2)	4/
Orchard Grass	-	90	78	1.50	175 (5)	4/
Redtop	-	90	78	1.80	175 (5)	4/
Ryegrass, Perennial, Annual	-	97	85	0.30	175 (5)	4/
Rye, Grain, Winter	-	92	83	0.50	70 (2)	4/
Rescue 911 Hard Fescue	0	97	82	0.10	105 (3)	-
Timothy	-	92	84	0.50	175 (5)	4/
Vetch, Crown	30	92	67	1.00	211 (6)	3/ & 6/
Vetch, Spring	30	92	88	1.00	70 (2)	4/
Vetch, Winter	15	92	83	1.00	105 (3)	4/
Wheat, hard Red Winter	-	92	89	0.50	70 (2)	4/

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## SELF-CONSOLIDATING CONCRETE FOR PRECAST PRODUCTS (BDE)

Effective: July 1, 2004

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. The design and testing of a self-consolidating concrete mixture shall be according to Section 1020 of the Standard Specifications except as modified herein.

Materials. Materials shall conform to the following requirements:

- (a) Self-Consolidating Admixtures. The self-consolidating admixture system shall consist of either a high range water-reducing admixture only or a high range water-reducing admixture combined with a separate viscosity modifying admixture. The one or two component admixture system shall be capable of producing a flowable concrete that does not require mechanical vibration.

The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F.

The viscosity modifying admixture will be evaluated according to the test methods and mix design proportions referenced in AASHTO M 194, except the following physical requirements shall be met:

- (1) For initial and final set times, the allowable deviation of the test concrete from the reference concrete shall not be more than 1.0 hour earlier or 1.5 hours later.
  - (2) For compressive and flexural strengths, the test concrete shall be a minimum of 90 percent of the reference concrete at 3, 7 and 28 days.
  - (3) The length change of the test concrete shall be a maximum 135 percent of the reference concrete. However, if the length change of the reference concrete is less than 0.030 percent, the length change of the test concrete shall be a maximum 0.010 percentage units greater than the reference concrete.
  - (4) The relative durability factor of the test concrete shall be a minimum 80 percent.
- (b) Fine Aggregate. A fine aggregate used alone in the mix design shall not have an expansion greater than 0.30 percent per ASTM C 1260. For a blend of two or more fine aggregates, the resulting blend shall not have an expansion greater than 0.30 percent.

The aggregate blend expansion will be calculated as follows:

$$\text{Aggregate Blend Expansion} = (a/100 \times A) + (b/100 \times B) + (c/100 \times C) + \dots \text{etc.}$$

Where: a, b, c, ... = percent of aggregate blend  
A, B, C, ... = aggregate expansion according to ASTM C 1260

Mix Design Criteria. The slump requirements of Article 1020.04 of the Standard Specifications shall not apply. In addition, the allowable coarse aggregate gradations shall be CA 11, CA 13, CA 14, CA 16, or a blend of these gradations. The fine aggregate proportion shall be a maximum 50 percent by mass (weight) of the total aggregate used.

Trail Batch. A minimum 1 cu m (1 cu yd) trial batch shall be produced. The mixture will be evaluated for air content, slump flow, visual stability index, compressive strength, passing ability, and static/dynamic segregation resistance.

The trial batch shall be scheduled and performed in the presence of the Engineer. Testing shall be performed per the Department's test method or as approved by the Engineer.

For the trial batch, the air content shall be within the top half of the allowable specification range. The slump flow range shall be 510 mm (20 in.) minimum to 710 mm (28 in.) maximum. The visual stability index shall be a maximum of 1. Strength shall be determined at 28 days. At the Contractor's option, strength may be determined for additional days.

Passing ability and static/dynamic segregation resistance shall be determined by tests selected by the Contractor and approved by the Engineer. The visual stability index shall not be used as the sole criteria for evaluating static segregation resistance.

After an acceptable mixture has been batched and tested, the mixture shall also be evaluated for robustness. Robustness shall be evaluated by varying the dosage of the self-consolidating admixture system and water separately. Additional trial batches may be necessary to accomplish this.

When necessary, the trial batches shall be disposed of according to Article 202.03 of the Standard Specifications.

Quality Control. Once testing is completed and acceptable results have been attained, production test frequencies and allowable test ranges for slump flow, visual stability index, passing ability, and static/dynamic segregation resistance shall be proposed. The production test frequencies and allowable test ranges will be approved by the Engineer.

The slump flow range shall be  $\pm 50$  mm ( $\pm 2$  in.) of the target value, and within the overall range of 510 mm (20 in.) minimum to 710 mm (28 in.) maximum. The visual stability index shall be a maximum of 1. The approved test ranges for passing ability and static/dynamic segregation resistance will be based on recommended guidelines determined by the Engineer.

## STABILIZED SUBBASE AND BITUMINOUS SHOULDERS SUPERPAVE (BDE)

Effective: April 1, 2002

Revised: August 1, 2005

Description. This work shall consist of constructing stabilized subbase and bituminous shoulders Superpave according to Sections 312 and 482 respectively, of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures" except as modified herein.

Revise Article 312.03(b) of the Standard Specifications to read:

"(b) RAP Material (Note 3)"

Revise Note 2 of Article 312.03 of the Standard Specifications to read:

"Note 2. Gradation CA 6, CA 10, or CA 12 shall be used."

Revise Note 3 of Article 312.03 of the Standard Specifications to read:

"Note 3. RAP shall meet the requirements of the special provision "RAP for Use in Bituminous Concrete Mixtures". RAP containing steel slag shall be permitted for use in top-lift surface mixtures only."

Revise Note 4 of Article 312.03 of the Standard Specifications to read:

"Note 4. Unless otherwise specified on the plans, the bituminous material shall be performance graded asphalt cement, PG58-22. When more than 15 percent RAP is used, a softer PG binder may be required as determined by the Engineer."

Revise Article 312.06 of the Standard Specifications to read:

**"312.06 Mixture Design.** The Contractor shall submit mix designs for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have completed the course, "Superpave Mix Design Upgrade". The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below:

- AASHTO MP 2 Standard Specification for Superpave Volumetric Mix Design
- AASHTO R 30 Standard Practice for Mixture Conditioning of Hot-Mix Asphalt (HMA)
- AASHTO PP 28 Standard Practice for Designing Superpave HMA
- AASHTO T 209 Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

AASHTO T 312 Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyrotory Compactor

AASHTO T 308 Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

(a) Job Mix Formula (JMF). The JMF shall be according to the following limits:

<u>Ingredient</u>	<u>Percent by Dry Weight</u>
Aggregate.....	94.0 to 96.0
Asphalt Cement.....	4.0 to 6.0*
Dust/AC Ratio .....	1.4

\*Upper limit may be raised for the lower or top lifts if the Contractor elects to use a highly absorptive coarse and/or fine aggregate requiring more than six percent asphalt. The additional asphalt shall be furnished at no cost to the Department.

When RAP material is being used, the JMF shall be according to the following limits:

<u>Ingredient</u>	<u>Percent by Dry Weight</u>
Virgin Aggregate(s) .....	46.0 to 96.0
RAP Material(s) (Note 1).....	0 to 50
Mineral Filler (if required) .....	0 to 5.0
Asphalt Cement.....	4.0 to 7.0
Dust/AC Ratio .....	1.4

Note 1. If specified on the plans, the maximum percentage of RAP shall be as specified therein.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

(b) Volumetric Requirements.

Design Compactive Effort	Design Air Voids Target (%)
$N_{DES} = 30$	2.0

(c) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified AASHTO T 283 using 4 in. Marshall bricks. To be considered acceptable by the Engineer as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSR) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSR values less than 0.75 will be considered unacceptable.



If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Engineer. The method of application shall be according to Article 406.12 of the Standard Specifications."

Revise Article 312.08 of the Standard Specifications to read:

**"312.08 Mixture Production.** When a hot-mix plant conforming to Article 1102.01 is used, the aggregate shall be dried and heated in the revolving dryer to a temperature of 120 °C (250 °F) to 175 °C (350 °F).

The aggregate and bituminous material used in the bituminous aggregate mixture shall be measured separately and accurately by weight or by volume. When the aggregate is in the mixer, the bituminous material shall be added and mixing continued for a minimum of 35 seconds and until a homogeneous mixture is produced in which all particles of the aggregate are coated. The mixing period, size of the batch and the production rate shall be approved by the Engineer.

The ingredients shall be heated and combined in such a manner as to produce a mixture which, when discharged from the mixer, shall be workable and vary not more 10 °C (20 °F) from the temperature set by the Engineer.

When RAP material(s) is used in the bituminous aggregate mixture, the virgin aggregate(s) shall be dried and heated in the dryer to a temperature that will produce the specified resultant mix temperature when combined with the RAP material.

The heated virgin aggregates and mineral filler shall be combined with RAP material in such a manner as to produce a bituminous mixture which when discharged from the mixer shall not vary more than 15 °C (30 °F) from the temperature set by the Engineer. The combined ingredients shall be mixed for a minimum of 35 seconds and until a homogeneous mixture as to composition and temperature is obtained. The total mixing time shall be a minimum of 45 seconds consisting of dry and wet mixing. Variation in wet and dry mixing times may be permitted, depending on the moisture content and amount of salvaged material used. The mix temperature shall not exceed 175 °C (350 °F). Wide variations in the mixture temperature will be cause for rejection of the mix.

- (a) Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

- (b) Required Tests. Testing for stabilized subbase and bituminous shoulders shall be conducted to control the production of the bituminous mixture using the test methods identified and performed at a frequency not less than indicated in the following table.

Parameter	Frequency of Tests Non-Class I Mixtures	Test Method
Aggregate Gradation  Hot bins for batch and continuous plants.  Individual cold-feeds or combined belt-feed for drier-drum plants.  (% passing sieves: 12.5 mm (1/2 In.), 4.75 mm (No. 4), 75 µm (No. 200))	1 gradation per day of production.  The first day of production shall be washed ignition oven test on the mix. Thereafter, the testing shall alternate between dry gradation and washed ignition oven test on the mix.  The dry gradation and the washed ignition oven test results shall be plotted on the same control chart.	Illinois Procedure (See Manual of Test Procedures for Materials).
Asphalt Content by ignition oven (Note 1.)	1 per day	Illinois-Modified AASHTO T 308
Air Voids		
Bulk Specific Gravity of Gyratory Sample	1 per day	Illinois-Modified AASHTO T 312
Maximum Specific Gravity of Mixture	1 per day	Illinois-Modified AASHTO T 209

Note 1. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.6, and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resumption of production.

During production, mixture containing an anti-stripping additive will be tested by the Engineer for stripping according to Illinois Modified AASHTO T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

(c) Control Charts/Limits. Control charts/limits shall be according to QC/QA requirements for Non-Class I Mixtures except air voids and density shall be plotted on the control charts within the following control limits:

Individual Test Control Limits	
Voids	±1.2%
Density <sup>1/</sup>	93.0 – 97.4% of G <sub>mm</sub>

1/ Except when placed as first lift over unimproved subgrade. When the exception applies, the first lift over unimproved subgrade shall be compacted to an average density of not less than 95 percent nor greater than 102 percent of the target density obtained on the growth curve.

Replace Article 312.10 of the Standard Specifications with the following:

**312.10 Placing.** After the subgrade has been compacted and is acceptable to the Engineer, the bituminous aggregate mixture shall be spread upon it with a mechanical spreader. The maximum compacted thickness of each lift shall be 150 mm (6 in.) provided the required density is obtained. The minimum compacted thickness of each lift shall be according to the following table:

Nominal Maximum Aggregate Size of Mixture	Minimum Compacted Lift Thickness
CA 12 – 12.5 mm (1/2 in.)	38 mm (1 1/2 in.)
CA 10 - 19 mm (3/4 in.)	57 mm (2 1/4 in.)
CA 6 – 25 mm (1 in.)	76 mm (3 in.)

The surface of each lift shall be clean and dry before succeeding lifts are placed.”

Revise Article 482.02 of the Standard Specifications to read:

**482.02 Materials.** Materials shall meet the requirements of Article 312.03. For the top lift, the aggregate used shall meet the gradation requirements for a CA 10 or CA 12. Blending of aggregates to meet these gradation requirements will be permitted.”

Revise the first paragraph of Article 482.04 of the Standard Specifications to read:

**482.04 General.** For pavement and shoulder resurfacing projects, Superpave binder and surface course mixtures may be used in lieu of bituminous aggregate mixture for the resurfacing of shoulders, at the option of the Contractor, or shall be used when specified on the plans.”

Revise Article 482.04(c) of the Standard Specifications to read:

“(c) Mixture Production .....312.08”

Revise Article 482.05 of the Standard Specifications to read:

**"482.05 Composition of Bituminous Aggregate Mixture.** The composition of the mixture shall be according to Article 312.06, except that the amount of asphalt cement used in the top lift shall be increased up to 0.5 percent more than that required in the lower lifts. For resurfacing projects when the Superpave binder and surface course mixtures option is used, the asphalt cement used in the top lift shall not be increased. Superpave mixtures used on the top lift of such shoulders shall meet the gradation requirements of the special provision "Superpave Bituminous Concrete Mixtures".

For shoulder and strip construction, the composition of the Superpave binder and surface course shall be the same as that specified for the mainline pavement."

In the following locations of Section 482 of the Standard Specifications, change "Class I" to "Superpave":

- the second paragraph of Article 482.04
- the first sentence of the second paragraph of Article 482.06
- the first sentence of the fourth paragraph of Article 482.06
- the second sentence of the fourth paragraph of Article 482.06
- the first sentence of the third paragraph of Article 482.08(b)

Revise the first paragraph of Article 482.06 of the Standard Specifications to read:

**"482.06 Placing.** This work shall be according to Article 312.10 as modified herein. The mechanical spreader for the top lift of shoulders shall meet the requirements of Article 1102.03 when the shoulder width is 3 m (10 ft) or greater."

Revise Article 482.09 of the Standard Specifications to read:

**"482.09 Basis of Payment.** When bituminous shoulders are constructed along the edges of the completed pavement structure, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS SHOULDERS SUPERPAVE of the thickness specified. The specified thickness shall be the thickness shown on the plans at the edge of the pavement.

On pavement and shoulder resurfacing projects, the shoulder resurfacing will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS SHOULDERS SUPERPAVE.

The construction of shoulder strips for resurfacing pavements will be paid according to the special provision, "Superpave Bituminous Concrete Mixtures".

80070

## STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004

Revised: July 1, 2004

Description. At the bidder's option, a steel cost adjustment will be made to provide additional compensation to the Contractor or a credit to the Department for fluctuations in steel prices. The bidder must indicate on the attached form whether or not steel cost adjustments will be part of this contract. This attached form shall be submitted with the bid. Failure to submit the form 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 kg (lb), shipped from the mill to the fabricator.
- (c) The quantity of steel, in kg (lb), 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 kg (lb)

D = price factor, in dollars per kg (lb)

$$D = CBP_M - CBP_L$$

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 kg (lb).

CBP<sub>L</sub> = 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 kg (lb).

The unit masses (weights) 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<sub>M</sub> 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<sub>L</sub> and CBP<sub>M</sub> 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 steel items 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.

**Attachment**

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 305 mm (12 in.), 3.80 mm (0.179 in.) wall thickness)	34 kg/m (23 lb/ft)
Furnishing Metal Pile Shells 305 mm (12 in.), 6.35 mm (0.250 in.) wall thickness)	48 kg/m (32 lb/ft)
Furnishing Metal Pile Shells 356 mm (14 in.), 6.35 mm (0.250 in.) wall thickness)	55 kg/m (37 lb/ft)
Other piling	See plans
Structural Steel	See plans for weights
Reinforcing Steel	See plans for weights
Dowel Bars and Tie Bars	3 kg (6 lb) each
Mesh Reinforcement	310 kg/sq m (63 lb/100 sq ft)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	30 kg/m (20 lb/ft)
Steel Plate Beam Guardrail, Type B w/steel posts	45 kg/m (30 lb/ft)
Steel Plate Beam Guardrail, Types A and B w/wood posts	12 kg/m (8 lb/ft)
Steel Plate Beam Guardrail, Type 2	140 kg (305 lb) each
Steel Plate Beam Guardrail, Type 6	570 kg (1260 lb) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	330 kg (730 lb) each
Traffic Barrier Terminal, Type 1 Special (Flared)	185 kg (410 lb) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	16 kg/m (11 lb/ft)
Light Pole, Tenon Mount and Twin Mount, 9 m – 12 m (30 - 40 ft)	21 kg/m (14 lb/ft)
Light Pole, Tenon Mount and Twin Mount, 13.5 m – 16.5 m (45 - 55 ft)	31 kg/m (21 lb/ft)
Light Pole w/Mast Arm, 9 m – 15.2 m (30 - 50 ft)	19 kg/m (13 lb/ft)
Light Pole w/Mast Arm, 16.5 m – 18 m (55 - 60 ft)	28 kg/m (19 lb/ft)
Light Tower w/Luminaire Mount, 24 m – 33.5 m (80 - 110 ft)	46 kg/m (31 lb/ft)
Light Tower w/Luminaire Mount, 36.5 m – 42.5 m (120 - 140 ft)	97 kg/m (65 lb/ft)
Light Tower w/Luminaire Mount, 45.5 m – 48.5 m (150 - 160 ft)	119 kg/m (80 lb/ft)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	95 kg/m (64 lb/ft)
Steel Railing, Type S-1	58 kg/m (39 lb/ft)
Steel Railing, Type T-1	79 kg/m (53 lb/ft)
Steel Bridge Rail	77 kg/m (52 lb/ft)
Frames and Grates	
Frame	115 kg (250 lb)
Lids and Grates	70 kg (150 lb)

Return With Bid

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
STEEL COST ADJUSTMENT**

The bidder shall submit this form with his/her bid. Failure to submit the form 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:** \_\_\_\_\_

80127

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## **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.

80143

**SUBGRADE PREPARATION (BDE)**

Effective: November 1, 2002

Revise the tenth paragraph of Article 301.03 of the Standard Specifications to read:

“Equipment of such weight, or used in such a way as to cause a rut in the finished subgrade of 13 mm (1/2 in.) or more in depth, shall be removed from the work or the rutting otherwise prevented.”

80086

## **SUPERPAVE BITUMINOUS CONCRETE MIXTURES (BDE)**

Effective: January 1, 2000

Revised: April 1, 2004

Description. This work shall consist of designing, producing and constructing Superpave bituminous concrete mixtures using Illinois Modified Strategic Highway Research Program (SHRP) Superpave criteria. This work shall be according to Sections 406 and 407 of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures", except as follows.

### Materials.

- (a) Fine Aggregate Blend Requirement. The Contractor may be required to provide FA 20 manufactured sand to meet the design requirements. For mixtures with  $N_{design} \geq 90$ , at least 50 percent of the required fine aggregate fraction shall consist of either stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation.
- (b) Reclaimed Asphalt Pavement (RAP). If the Contractor is allowed to use more than 15 percent RAP, as specified in the plans, a softer performance-graded binder may be required as determined by the Engineer.

RAP shall meet the requirements of the special provision, "RAP for Use in Bituminous Concrete Mixtures".

RAP will not be permitted in mixtures containing polymer modifiers.

RAP containing steel slag will be permitted for use in top-lift surface mixtures only.

- (c) Bituminous Material. The asphalt cement (AC) shall be performance-graded (PG) or polymer modified performance-graded (SBS-PG or SBR-PG) meeting the requirements of Article 1009.05 of the Standard Specifications for the grade specified on the plans.

The following additional guidelines shall be used if a polymer modified asphalt is specified:

- (1) The polymer modified asphalt cement shall be shipped, maintained, and stored at the mix plant according to the manufacturer's requirements. Polymer modified asphalt cement shall be placed in an empty tank and shall not be blended with other asphalt cements.
- (2) The mixture shall be designed using a mixing temperature of  $163 \pm 3$  °C ( $325 \pm 5$  °F) and a gyratory compaction temperature of  $152 \pm 3$  °C ( $305 \pm 5$  °F).
- (3) Pneumatic-tired rollers will not be allowed unless otherwise specified by the Engineer. A vibratory roller meeting the requirements of Article 406.16 of the

Standard Specifications shall be required in the absence of the pneumatic-tired roller.

Laboratory Equipment.

- (a) Superpave Gyratory Compactor. The superpave gyratory compactor (SGC) shall be used for all QC/QA testing.
- (b) Ignition Oven. The ignition oven shall be used to determine the AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations.

The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

Mixture Design. The Contractor shall submit mix designs, for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have successfully completed the course, "Superpave Mix Design Upgrade". Articles 406.10 and 406.13 of the Standard Specifications shall not apply. The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below.

AASHTO MP 2	Standard Specification for Superpave Volumetric Mix Design
AASHTO R 30	Standard Practice for Mixture Conditioning of Hot-Mix Asphalt (HMA)
AASHTO PP 28	Standard Practice for Designing Superpave HMA
AASHTO T 209	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
AASHTO T 312	Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
AASHTO T 308	Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

- (a) Mixture Composition. The ingredients of the bituminous mixture shall be combined in such proportions as to produce a mixture conforming to the composition limits by weight. The gradation mixture specified on the plans shall produce a mixture falling within the limits specified in Table 1.

TABLE 1. MIXTURE COMPOSITION (% PASSING) <sup>1/</sup>								
Sieve Size	IL-25.0 mm		IL-19.0 mm		IL-12.5 mm <sup>4/</sup>		IL-9.5 mm <sup>4/</sup>	
	min	max	min	max	min	max	min	max
37.5 mm (1 1/2 in.)		100						
25 mm (1 in.)	90	100		100				
19 mm (3/4 in.)		90	82	100		100		
12.5 mm (1/2 in.)	45	75	50	85	90	100		100
9.5 mm (3/8 in.)						89	90	100
4.75 mm (#4)	24	42 <sup>2/</sup>	24	50 <sup>2/</sup>	28	65	28	65
2.36 mm (#8)	16	31	20	36	28	48 <sup>3/</sup>	28	48 <sup>3/</sup>
1.18 mm (#16)	10	22	10	25	10	32	10	32
600 µm (#30)								
300 µm (#50)	4	12	4	12	4	15	4	15
150 µm (#100)	3	9	3	9	3	10	3	10
75 µm (#200)	3	6	3	6	4	6	4	6

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 40 percent passing the 4.75 mm (#4) sieve for binder courses with Ndesign ≥ 90.

3/ The mixture composition shall not exceed 40 percent passing the 2.36 mm (#8) sieve for surface courses with Ndesign ≥ 90.

4/ The mixture composition for surface courses shall be according to IL-12.5 mm or IL-9.5 mm, unless otherwise specified by the Engineer.

One of the above gradations shall be used for leveling binder as specified in the plans and according to Article 406.04 of the Standard Specifications.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

- (b) Dust/AC Ratio for Superpave. The ratio of material passing the 75  $\mu\text{m}$  (#200) sieve to total asphalt cement shall not exceed 1.0 for mixture design (based on total weight of mixture).
- (c) Volumetric Requirements. The target value for the air voids of the hot mix asphalt (HMA) shall be 4.0 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the requirements listed in Table 2.

TABLE 2. VOLUMETRIC REQUIREMENTS					
Ndesign	Voids in the Mineral Aggregate (VMA), % minimum				Voids Filled with Asphalt (VFA), %
	IL-25.0	IL-19.0	IL-12.5	IL-9.5	
50	12.0	13.0	14.0	15	65 - 78
70					
90					
105					65 - 75

- (d) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified T 283 using 4 in. Marshall bricks. To be considered acceptable by the Department as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSRs) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSRs less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Department. The method of application shall be according to Article 406.12 of the Standard Specifications.

Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

**Required Plant Tests.** Testing shall be conducted to control the production of the bituminous mixture. The Contractor shall use the test methods identified to perform the following mixture tests at a frequency not less than that indicated in Table 3.

TABLE 3. REQUIRED PLANT TESTS for SUPERPAVE			
Parameter		Frequency of Tests	Test Method
Aggregate Gradation  Hot bins for batch and continuous plants  Individual cold-feeds or combined belt-feed for drier drum plants.  (% passing sieves: 12.5 mm (1/2 in.), 4.75 mm (No. 4), 2.36 mm (No. 8), 600 µm (No. 30), 75 µm (No. 200))		1 dry gradation per day of production (either morning or afternoon sample).  and  1 washed ignition oven test on the mix per day of production (conduct in afternoon if dry gradation is conducted in the morning or vice versa).  NOTE. The order in which the above tests are conducted shall alternate from the previous production day (example: a dry gradation conducted in the morning will be conducted in the afternoon on the next production day and so forth).  The dry gradation and washed ignition oven test results shall be plotted on the same control chart.	Illinois Procedure (See Manual of Test Procedures for Materials).
Asphalt Content by Ignition Oven (Note 1.)		1 per half day of production	Illinois Modified AASHTO T 308
Air Voids	Bulk Specific Gravity of Gyratory Sample	1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)	Illinois Modified AASHTO T 312
	Maximum Specific Gravity of Mixture		Illinois Modified AASHTO T 209

Note 1. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.2 and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resuming production.

During production, mixtures containing an anti-stripping additive will be tested by the Department for stripping according to Illinois Modified T 283. If the mixture fails to meet the TSR

criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

Construction Requirements

Lift Thickness.

- (a) Binder and Surface Courses. The minimum compacted lift thickness for constructing bituminous concrete binder and surface courses shall be according to Table 4:

<b>TABLE 4 – MINIMUM COMPACTED LIFT THICKNESS</b>	
Mixture	Thickness, mm (in.)
IL-9.5	32 (1 1/4)
IL-12.5	38 (1 1/2)
IL-19.0	57 (2 1/4)
IL-25.0	76 (3)

- (b) Leveling Binder. Mixtures used for leveling binder shall be as follows:

<b>TABLE 5 – LEVELING BINDER</b>	
Nominal, Compacted, Leveling Binder Thickness, mm (in.)	Mixture
≤ 32 (1 1/4)	IL-9.5
32 (1 1/4) to 50 (2)	IL 9.5 or IL-12.5

Density requirements shall apply for leveling binder when the nominal, compacted thickness is 32 mm (1 1/4 in.) or greater for IL-9.5 mixtures and 38 mm (1 1/2 in.) or greater for IL-12.5 mixtures.

- (c) Full-Depth Pavement. The compacted thickness of the initial lift of binder course shall be 100 mm (4 in.). The compacted thickness of succeeding lifts shall meet the minimums specified in Table 4 but not exceed 100 mm (4 in.).

If a vibratory roller is used for breakdown, the compacted thickness of the binder lifts, excluding the top lift, may be increased to 150 mm (6 in.) provided the required density is obtained.

- (d) Bituminous Patching. The minimum compacted lift thickness for constructing bituminous patches shall be according to Table 4.



Control Charts/Limits. Control charts/limits shall be according to QC/QA Class I requirements, except density shall be plotted on the control charts within the following control limits:

Mixture	Parameter	Individual Test
12.5 mm / 9.5 mm	Ndesign $\geq$ 90	92.0 – 96.0%
12.5 mm / 9.5 mm	Ndesign $<$ 90	92.5 – 97.4%
19.0 mm / 25.0 mm	Ndesign $\geq$ 90	93.0 – 96.0%
19.0 mm / 25.0 mm	Ndesign $<$ 90	93.0 – 97.4%

Basis of Payment. On resurfacing projects, this work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On resurfacing projects in which polymer modifiers are required, this work will be paid for at the contract unit price per metric ton (ton) for POLYMERIZED BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, POLYMERIZED LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, POLYMERIZED LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and POLYMERIZED BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On full-depth pavement projects, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE PAVEMENT, (FULL-DEPTH), SUPERPAVE, of the thickness specified.

On projects where widening is constructed and the entire pavement is then resurfaced, the binder for the widening will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition, Ndesign, and thickness specified. The surface and binder used to resurface the entire pavement will be paid for according to the paragraphs above for resurfacing projects.

80010

## **TEMPORARY EROSION CONTROL (BDE)**

Effective: November 1, 2002

Revise the fifth sentence of the third paragraph of Article 280.04(a) of the Standard Specifications to read:

"This work may be constructed of hay or straw bales, extruded UV resistant high density polyethylene panels, erosion control blanket, mulch barrier, aggregate barriers, excavation, seeding, or mulch used separately or in combination, as approved, by the Engineer."

Add the following paragraphs after the fifth paragraph of Article 280.04(a) of the Standard Specifications.

"A ditch check constructed of extruded, UV resistant, high density polyethylene panels, "M" pins and erosion control blanket shall consist of the following materials:

Extruded, UV resistant, high density polyethylene panels shall have a minimum height of 250 mm (10 in.) and minimum length of 1.0 m (39.4 in.). The panels shall have a 51 mm (2 in.) lip along the bottom of the panel. Each panel shall have a single rib thickness of 4 mm (5/32 in.) with a 12 mm (1/2 in.) distance between the ribs. The panels shall have an average apparent opening size equal to 4.75 mm (No. 4) sieve, with an average of 30 percent open area. The tensile strength of each panel shall be 26.27 kN/m (1800 lb/ft) in the machine direction and 7.3 kN/m (500 lb/ft) in the transverse direction when tested according to ASTM D 4595.

"M" pins shall be at least 76 mm (3 in.) by 686 mm (27 in.), constructed out of deformed grade C1008 D3.5 rod (0.211 in. diameter). The rod shall have a minimum tensile strength of 55 MPa (8000 psi).

Erosion control blanket shall conform to Article 251.04.

A section of erosion control blanket shall be placed transverse to the flowline direction of the ditch prior to the construction of the polyethylene ditch check. The length of the section shall extend from the top of one side of the ditch to the top of the opposite side of the ditch, while the width of the section shall be one roll width of the blanket. The upstream edge of the erosion control blanket shall be secured in a 100 mm (4 in.) trench. The blanket shall be secured in the trench with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge before the trench is backfilled. Once the upstream edge of the blanket is secured, the downstream edge shall be secured with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge. The polyethylene ditch check shall be installed in the middle of the erosion control blanket, with the lip of each panel facing outward.

The ditch check shall consist of two panels placed back to back forming a single row. Placement of the first two panels shall be at the toe of the backslope or sideslope, with the panels extending across the bottom of the ditch. Subsequent panels shall extend both across the bottom of the ditch and up the opposite sideslope, as well as up the original backslope or sideslope at the distance determined by the Engineer.

The M pins shall be driven through the panel lips to secure the panels to the ground. M pins shall be installed in the center of the panels with adjacent panels overlapping the ends a minimum of 50 mm (2 in.). The pins shall be placed through both sets of panels at each overlap. They shall be installed at an interval of three M pins per one meter (39 in.) length of ditch check. The panels shall be wedged into the M pins at the top to ensure firm contact between the entire bottom of the panels and the soil."

80087

## **TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)**

Effective: April 1, 1992

Revised: January 1, 2005

To ensure a prompt response to incidents involving the integrity of work zone traffic control, the Contractor shall provide a telephone number where a responsible individual can be contacted 24 hours-a-day.

When the Engineer is notified, or determines a traffic control deficiency 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 12 hours based upon the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

A deficiency may be any lack of repair, maintenance, or non-compliance with the traffic control plan. A deficiency may also be applied to situations where corrective action is not an option such as the use of non-certified flaggers for short term operations; working with lane closures beyond the time allowed in the contract; or failure to perform required contract obligations such as traffic control surveillance.

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 \$1,000 or 0.05 percent of the awarded contract value, whichever is greater. For those deficiencies where corrective action was not an option this monetary deduction will be immediate.

In addition, if the Contractor fails to respond, the Engineer may correct the deficiency 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.

5729I

**TRAINING SPECIAL PROVISIONS (BDE)** This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 2. In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

METHOD OF MEASUREMENT The unit of measurement is in hours.

BASIS OF PAYMENT This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

20338

**TRUCK BED RELEASE AGENT (BDE)**

Effective: April 1, 2004

Add the following sentence after the third sentence of the first paragraph of Article 406.14 of the Standard Specifications.

"In addition to the release agent, the Contractor may use a light scatter of manufactured sand (FA 20 or FA 21) evenly distributed over the bed of the vehicle."

80123



**VARIABLY SPACED TINING (BDE)**

Effective: August 1, 2005

Revise the first sentence of the third paragraph of Article 420.11(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."

Replace the sixth sentence of the third paragraph of Article 420.11(e)(1) of the Standard Specifications to read:

"The tining device shall be operated so as to produce a pattern of grooves, 3 to 5 mm (1/8 in. to 3/16 in.) deep and 2.5 to 3.2 mm (1/10 in. to 1/8 in.) 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 420.11(e)(1) of the Standard Specifications:

Center to Center Spacings of Metal Comb Tines mm (in.) (read spacings left to right)				
34 (1 5/16)	36 (1 7/16)	47 (1 7/8)	54 (2 1/8)	48 (1 7/8)
43 (1 11/16)	32 (1 1/4)	31 (1 1/4)	27 (1 1/16)	36 (1 7/16)
29 (1 1/8)	46 (1 13/16)	21 (13/16)	43 (1 11/16)	23 (7/8)
42 (1 5/8)	52 (2 1/16)	24 (15/16)	18 (11/16)	28 (1 1/8)
40 (1 9/16)	34 (1 5/16)	27 (1 1/16)	26 (1)	25 (1)
27 (1 1/16)	20 (13/16)	37 (1 7/16)	38 (1 1/2)	52 (2 1/16)
51 (2)	45 (1 3/4)	37 (1 7/16)	43 (1 11/16)	53 (2 1/16)
27 (1 1/16)	37 (1 7/16)	42 (1 5/8)	41 (1 5/8)	29 (1 1/8)
43 (1 11/16)	45 (1 3/4)	44 (1 3/4)	30 (1 3/16)	37 (1 7/16)
33 (1 5/16)	40 (1 9/16)	28 (1 1/8)	31 (1 1/4)	50 (1 15/16)
34 (1 5/16)	45 (1 3/4)	20 (13/16)	45 (1 3/4)	50 (1 15/16)
53 (2 1/16)	51 (2)	29 (1 1/8)	25 (1)	18 (11/16)
53 (2 1/16)	18 (11/16)	38 (1 1/2)	51 (2)	40 (1 9/16)
17 (11/16)	49 (1 15/16)	50 (1 15/16)	39 (1 9/16)	51 (2)
36 (1 7/16)	36 (1 7/16)	38 (1 1/2)	46 (1 13/16)	29 (1 1/8)
38 (1 1/2)	50 (1 15/16)	24 (15/16)	33 (1 5/16)	

## WEIGHT CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: April 1, 2001

Revised: August 1, 2002

The Contractor shall provide accurate weights of materials delivered to the contract for incorporation into the work (whether temporary or permanent) and for which the basis of payment is by weight. These weights shall be documented on delivery tickets which shall identify the source of the material, type of material, the date and time the material was loaded, the contract number, the net weight, the tare weight when applicable and the identification of the transporting vehicle. For aggregates, the Contractor shall have the driver of the vehicle furnish or establish an acceptable alternative to provide the contract number and a copy of the material order to the source for each load. The source is defined as that facility that produces the final material product that is to be incorporated into the contract pay items.

The Department will conduct random, independent vehicle weight checks for material sources according to the procedures outlined in the Documentation Section Policy Statement of the Department's Construction Manual and hereby incorporated by reference. The results of the independent weight checks shall be applicable to all contracts containing this Special Provision. Should the vehicle weight check for a source result in the net weight of material on the vehicle exceeding the net weight of material shown on the delivery ticket by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. No adjustment in pay quantity will be made. Should the vehicle weight check for a source result in the net weight of material shown on the delivery ticket exceeding the net weight of material on the vehicle by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. The Engineer will adjust the net weight shown on the delivery ticket to the checked delivered net weight as determined by the independent vehicle weight check.

The Engineer will also adjust the method of measurement for all contracts for subsequent deliveries of all materials from the source based on the independent weight check. The net weight of all materials delivered to all contracts containing this Special Provision from this source, for which the basis of payment is by weight, will be adjusted by applying a correction factor "A" as determined by the following formula:

$$A = 1.0 - \left( \frac{B - C}{B} \right); \text{ Where } A \leq 1.0; \left( \frac{B - C}{C} \right) > 0.50\% \text{ (0.70\% for aggregates)}$$

Where A = Adjustment factor

B = Net weight shown on delivery ticket

C = Net weight determined from independent weight check

The adjustment factor will be applied as follows:

$$\text{Adjusted Net Weight} = A \times \text{Delivery Ticket Net Weight}$$

The adjustment factor will be imposed until the cause of the deficient weight is identified and corrected by the Contractor to the satisfaction of the Engineer. If the cause of the deficient weight is not identified and corrected within seven (7) calendar days, the source shall cease delivery of all materials to all contracts containing this Special Provision for which the basis of payment is by weight.

Should the Contractor elect to challenge the results of the independent weight check, the Engineer will continue to document the weight of material for which the adjustment factor would be applied. However, provided the Contractor furnishes the Engineer with written documentation that the source scale has been calibrated within seven (7) calendar days after the date of the independent weight check, adjustments in the weight of material paid for will not be applied unless the scale calibration demonstrates that the source scale was not within the specified Department of Agriculture tolerance.

At the Contractor's option, the vehicle may be weighed on a second independent Department of Agriculture certified scale to verify the accuracy of the scale used for the independent weight check.

80048

## WORK ZONE SPEED LIMIT SIGNS (BDE)

Effective: April 2, 2004  
Revised: April 15, 2004

Delete Article 702.05(c).

Revise Article 702.05(d) to read:

"(d) Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be placed 150 m (500 ft) beyond the last entrance ramp for each interchange. The individual signs that make up an assembly may be combined on a single panel. The sheeting for the signs shall be reflective and conform to the requirements of Article 1084.02.

All permanent "SPEED LIMIT" signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closure(s) by promptly establishing a reduced posted speed zone when the lane closure(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.

The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closure(s).

The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic; at all other times, the signs shall be promptly removed or covered. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall.

80125

## WORK ZONE TRAFFIC CONTROL (BDE)

Effective: April 2, 2004

Revised: January 2, 2005

Revise the first paragraph of Article 701.07(b) to read:

"(b) Standards 701401, 701422, and 701446 will be measured for payment on an each basis only when the traffic control and protection applies to isolated stationary work areas and does not involve or is not a part of other protected areas."

Revise the Article 701.07(c) to read:

"(c) Measured As Lump Sum. Traffic control and protection required under Standards 701201, 701206, 701306, 701326, 701336, 701400, 701406, 701421, 701501, 701502, 701601, 701602, 701606, 701701 and 701801 will be measured for payment on a lump sum basis. Traffic control protection required under Standards 701401, 701422, and 701446 will be measured for payment on a lump sum basis, except as specified under Article 701.07(b). Where the Contractor's operations result in daily changing, or two or more work areas each of which requires traffic control according to one of the above Standards, each work area installation will not be paid for separately, but shall be included in the lump sum price for the type of protection furnished."

Revise the first paragraph of Article 701.08(a) to read:

"(a) Traffic control and protection will be paid for at the contract unit price each for TRAFFIC CONTROL AND PROTECTION STANDARD 701316; TRAFFIC CONTROL AND PROTECTION STANDARD 701321; TRAFFIC CONTROL AND PROTECTION STANDARD 701331; TRAFFIC CONTROL AND PROTECTION STANDARD 701401; TRAFFIC CONTROL AND PROTECTION STANDARD 701402; TRAFFIC CONTROL AND PROTECTION STANDARD 701411; TRAFFIC CONTROL AND PROTECTION STANDARD 701416; TRAFFIC CONTROL AND PROTECTION STANDARD 701422; TRAFFIC CONTROL AND PROTECTION STANDARD 701423; TRAFFIC CONTROL AND PROTECTION STANDARD 701431; or TRAFFIC CONTROL AND PROTECTION STANDARD 701446 at the location specified."

Revise the first paragraph of Article 701.08(b) to read:

"(b) Traffic control and protection indicated in Article 701.07(c) will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION STANDARD 701201; TRAFFIC CONTROL AND PROTECTION STANDARD 701206; TRAFFIC CONTROL AND PROTECTION STANDARD 701306; TRAFFIC CONTROL AND PROTECTION STANDARD 701326; TRAFFIC CONTROL AND PROTECTION STANDARD 701336; TRAFFIC CONTROL AND PROTECTION STANDARD 701400; TRAFFIC CONTROL AND PROTECTION STANDARD 701401; TRAFFIC CONTROL AND PROTECTION STANDARD 701406; TRAFFIC CONTROL AND PROTECTION STANDARD 701421; TRAFFIC CONTROL AND PROTECTION STANDARD 701422; TRAFFIC CONTROL

| AND PROTECTION STANDARD 701446; TRAFFIC CONTROL AND PROTECTION STANDARD 701501; TRAFFIC CONTROL AND PROTECTION STANDARD 701502; TRAFFIC CONTROL AND PROTECTION STANDARD 701601; TRAFFIC CONTROL AND PROTECTION STANDARD 701602, TRAFFIC CONTROL AND PROTECTION STANDARD 701606; TRAFFIC CONTROL AND PROTECTION STANDARD 701701; or TRAFFIC CONTROL AND PROTECTION STANDARD 701801."

80126

## **WORK ZONE TRAFFIC CONTROL DEVICES (BDE)**

Effective: January 1, 2003

Revised: November 1, 2004

Add the following to Article 702.01 of the Standard Specifications:

"All devices and combinations of devices shall meet the requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 for their respective categories. The categories are as follows:

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, flexible delineators and plastic drums with no attachments. Category 1 devices shall be crash tested and accepted or may be self-certified by the manufacturer.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include drums and vertical panels with lights, barricades and portable sign supports. Category 2 devices shall be crash tested and accepted for Test Level 3.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions, truck mounted attenuators and other devices not meeting the definitions of Category 1 or 2. Category 3 devices shall be crash tested and accepted for either Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals and area lighting supports. Currently, there is no implementation date set for this category and it is exempt from the NCHRP 350 compliance requirement.

The Contractor shall provide a manufacturer's self-certification letter for each Category 1 device and an FHWA acceptance letter for each Category 2 and Category 3 device used on the contract. The letters shall state the device meets the NCHRP 350 requirements for its respective category and test level, and shall include a detail drawing of the device."

Delete the third, fourth and fifth paragraphs of Article 702.03(b) of the Standard Specifications.

Delete the third sentence of the first paragraph of Article 702.03(c) of the Standard Specifications.

Revise the first sentence of the first paragraph of Article 702.03(e) of the Standard Specifications to read:

"Drums shall be nonmetallic and have alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes."

Add the following to Article 702.03 of the Standard Specifications:

"(h) Vertical Barricades. Vertical barricades may be used in lieu of cones, drums or Type II barricades to channelize traffic."

Delete the fourth paragraph of Article 702.05(a) of the Standard Specifications.

Revise the sixth paragraph of Article 702.05(a) of the Standard Specifications to read:

"When the work operations exceed four days, all signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, a temporary sign stand may be used to support a sign at 1.2 m (5 ft) minimum where posts are impractical. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 30 m (100 ft) to avoid obstacles, hazards or to improve sight distance, when approved by the Engineer. "ROAD CONSTRUCTION AHEAD" signs will also be required on side roads located within the limits of the mainline "ROAD CONSTRUCTION AHEAD" signs."

Delete all references to "Type 1A barricades" and "wing barricades" throughout Section 702 of the Standard Specifications.

80097



**WORKING DAYS (BDE)**

Effective: January 1, 2002

The Contractor shall complete the work within 130 working days.

80071

Deerfield Parkway STP Improvement  
Section No. 03-00088-00-FP  
Job No.: C-91-266-05  
Project No. M-8003(524)  
Contract No.: 83807

**ENVIRONMENTAL SURVEY REQUEST FORMS**  
**TOPSOIL AND/OR BORROW EXCAVATION**

# AGREEMENT

TO WHOM IT MAY CONCERN:

I, said property owner, \_\_\_\_\_  
(Name of property owner)

\_\_\_\_\_  
(Address of property owner)

do hereby grant to the *State Historic Preservation* officer and the *Illinois Archaeological Survey*, or their agents; permission to survey and/or test excavate said property, located

\_\_\_\_\_  
(Indicate location of property by county, range, township and sub-section, as necessary.)

\_\_\_\_\_  
Signature of Property Owner

\_\_\_\_\_  
Name and Address of Property Owner

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_  
owner of said property, do hereby grant permission from the *State Historic Preservation* officer and the *Illinois Archaeological Survey*, or their agents, acting on behalf of the Illinois Department of Transportation, to remove artifacts found on said property and agree that all artifacts shall remain in public ownership, in the custody of the *State Historic Preservation* officer and the *Illinois Archaeological Survey*, or their agents.

\_\_\_\_\_  
Signature of Property Owner

\_\_\_\_\_  
Name and Address of Property Owner

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Archaeological Survey  
(217) 785-2831

Biological/Agricultural Survey  
(217) 785-2943

A. Submittal Date: \_\_\_\_\_ Requesting Agency:  DOH  DOA  Local  Other: \_\_\_\_\_  
 Previous survey request(s) submitted for this project?  Yes  No Addendum # \_\_\_\_\_  
 Date(s) of prior submittal(s): \_\_\_\_\_

B. Route: \_\_\_\_\_ Marked: \_\_\_\_\_ County(ies): \_\_\_\_\_ District: \_\_\_\_\_  
 Section: \_\_\_\_\_ Project No.: \_\_\_\_\_  
 Job No.: P- \_\_\_\_\_ C- \_\_\_\_\_ Contract No.: \_\_\_\_\_

C.  Borrow/ Waste/ Use Area Location (Check each which applies.):  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

D. 0.00 m<sup>3</sup> ( \_\_\_\_\_ yds<sup>3</sup>) borrow from this area. Borrow/Waste/Use Area Size: 0.00 ha. ( \_\_\_\_\_ acres)  
 Current Land Use (Check each which applies.):  Timber  Row Crops  Pasture  Other (Describe): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

E. Name of Contractor: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Name of District/Local Resident Engineer: \_\_\_\_\_ Phone: \_\_\_\_\_

F. Has Borrow Area been approved by Bureau of Materials? (Check one.)  Yes  No  Not Applicable  
 Date of Approval: \_\_\_\_\_

G. This request is number \_\_\_\_\_ of \_\_\_\_\_ requests for this project.

(LEAVE THIS SPACE BLANK)

**ATTACHMENTS REQUIRED**

215

# BORROW/WASTE/USE AREAS

## Instructions

**NOTE:** PLEASE FILL OUT THE ENTIRE FORM. INCOMPLETE FORMS OR ATTACHMENTS WILL BE RETURNED FOR ADDITIONAL INFORMATION. If additional space is needed, incorporate necessary information in the transmittal memorandum. A TRANSMITTAL MEMORANDUM MUST BE SUBMITTED WITH EACH REQUEST FORM.

- Submit survey request at earliest possible date to ensure that construction schedules will be met.
- Complete and submit individual forms and attachments for each borrow area, haul road, plant site, staging/storage area, waste area, etc. to be surveyed.
- In order to avoid repeated trips to the same project site, indicate the number of requests being submitted for this project as the last entry on this form

---

A. Requesting Agency: DOH - Division of Highways project  
DOA - Division of Aeronautics project  
DOWR - Division of Water Resources project  
Local - County or Municipality project

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B. Route: FAP, FAI, FAU, CH. TR. etc.  
Marked: Illinois State route designation, U.S. route designation, etc.

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C. Borrow/Use Area Location: Describe location of borrow area(s), haul roads, plant sites, staging/storage area, waste area, etc. Include location map\* and plan sketch.

### Submittals/Attachments:

- Transmittal Memorandum
- 1 original and 2 copies of this form, each with a location map\*, plan sketch, and signed "Landowner Release Form".
- 3 sets of plan view layouts with approximate ROW/easement limits.
- 1 copy of ground level photos is required.

\*Copies from recent plat books also are very useful.

SUBMIT TO APPROPRIATE DISTRICT OFFICE FOR FORWARDING TO:

Gary Gould  
Bureau of Design & Environment  
Illinois Department of Transportation  
2300 South Dirksen Parkway, Room 330  
Springfield, Illinois 62764

Attention: Peter J. Frantz

For additional information, call (217) 782-4770.

Deerfield Parkway STP Improvement  
Section No. 03-00088-00-FP  
Job No.: C-91-266-05  
Project No. M-8003(524)  
Contract No.: 83807

**NATIONAL POLLUTION DISCHARGE ELIMINATION  
SYSTEM WATER PERMIT**



Route Deerfield Parkway (County Highway A47)

Marked Deerfield Parkway

Section 03-00088-00-FP

Project No. M-8003(524)

County Lake

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.

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.

*Reed T. Mann*  
Signature

6/2/2005  
Date

PROJECT ENGINEER  
Title

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):

This project is formally known as the Deerfield Parkway STP Improvement and consists of the reconstruction of Deerfield Parkway, from IL Route 83 to Weiland Road. The work to be performed as a part of this project will consist of the following: Tree Removal; Curb & Gutter and Pavement Removal; Earth Excavation; Construction of Storm Sewer; Construction of Bituminous Shoulders and Aggregate Shoulders; Construction of P.C.C. Curb & Gutter and Medians; Construction of P.C.C. Pavement and P.C.C. Base Course, Construction of Bituminous Surface Course; P.C.C. Sidewalks; Traffic Signals; Pavement Markings; Signing; Landscaping and all other incidental work necessary to complete the project as shown on the plans.

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):

1. Tree Removal
2. Earth Excavation
3. Existing Pavement Removal
4. Storm Sewer Installation
5. Subgrade Preparation and Paving
6. Traffic Signal Installation
7. Grading
8. Landscaping

c. The total area of the construction site is estimated to be 22 acres.

The total area of the site that it is estimated to be disturbed by excavation, grading or other activities is 20.5 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.
- e. The design/project report and 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.
- f. The names of receiving water(s) and area extent of wetland acreage at the site are in the design/project report and are incorporated by reference as a part of this plan.

## 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):

- Temporary Tree Protection – Where applicable, Tree Trunk Protection, Tree Root Pruning, and Tree Pruning (1 to 10 Inch Diameter) in accordance with Section 201 of the IDOT “Standard Specifications” for Road and Bridge Construction” shall be used to preserve existing trees.
- Permanent Stabilization – All areas disturbed during construction shall be stabilized with permanent seeding immediately following finished grading.



- Temporary Seeding – Temporary Seeding shall be used to protect bare earth during winter months.

- (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):

- Stabilized Construction Entrance – Coarse Aggregate overlaying a geotextile fabric will be placed in locations necessary for contractor access. The aggregate surface will collect soil debris, reducing soil deposits on the pavement by vehicles exiting the work zone.
- Inlet and Outlet Protection – Inlet and Outlet Protection will be placed at storm sewer structures per the Erosion Control Plans to reduce sedimentation and downstream erosion.
- Temporary Ditch Checks – Ditch Checks will be placed in swales approximately every 100 feet or per the Engineer to prevent downstream erosion.
- Pipe Underdrains – Pipe Underdrains will be used to minimize potential erosion caused by surface water flows by reducing subsurface water which can cause failed pavements and other disturbed areas.

**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):

- Ditches and swales will be used where possible to provide runoff infiltration and a buffer effect for stormwater runoff contaminants. All ditches and swales will be vegetated.

**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:

- See Erosion and Sediment Control Plans

**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):

Construction equipment shall be stored and fueled only at designated locations. All necessary measures shall be taken to contain any fuel or pollution runoff in compliance with environmental law and EPA Water Quality Regulations. Leaking equipment or supplies shall be immediately repaired or removed from the site. The construction field engineer on a bi-weekly basis shall inspect the project to determine that erosion control efforts are in place and effective and if other control is necessary. Sediment collected during the construction by various temporary erosion systems shall be disposed on the site on a regular basis as directed by the Engineer.

All erosion control measures will be checked weekly and after each significant rainfall (0.5 inches or greater in a 24 hour period).

All maintenance of the erosion control systems will be the responsibility of the contractor. All locations where vehicles enter and exit the construction site and all other areas subject to erosion should also be inspected periodically. Inspection of these areas shall be made at least once every seven days and within 24 hours of the end of each 0.5 inch or greater rainfall, or an equivalent snowfall.

**4. Inspections**

Qualified personnel 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, 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 Resident Engineer or Resident Technician shall complete and file an "Incidence of Noncompliance" (ION) report for the identified violation. The 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

- Dewatering activities for footing and pier construction of retaining walls will be a source of non-stormwater discharge during construction. Contractors should discharge dewatering activities to a temporary settling basin surrounded by silt fence.
- The cutting of joints in P.C.C. pavements will result in slurry. This slurry will be contained on the pavement and cleaned up and disposed of per the Engineer's directions.
- Redi-mix concrete trucks should wash out only in areas designated for said purpose by the Engineer. The wash out area should be surrounded by silt fence. After all P.C.C. items have been constructed, the dried concrete material will be cleaned up and disposed of per the Engineer.
- On site maintenance of equipment must be performed in accordance with environmental law, such as no dumping of old engine oil and other fluids on site.



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>Deerfield Parkway (County Highway A47)</u>	Marked	<u>Deerfield Parkway</u>
Section	<u>03-00088-00-FP</u>	Project No.	<u>M-8003(524)</u>
County	<u>Lake</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



1. a. Phase I & II NPDES Storm Water Permit Requirements (Applicable to all projects involving soil disturbance of 1 acre (0.4 hectares) or more.

Will the project involve soil disturbance of 1 acre (0.4 hectares) or more?

- Yes The project must comply with the Phase II NPDES Storm Water Permit Requirements.
- No

2. Identify, by station, the known location of bridges and culverts. Indicate the anticipated size of each and the nature of the soil disturbance activity(ies) that each will involve (e.g., slope grading, channel shaping, watercourse realignment.)

- *Not Applicable*

3. Indicate the type and identify the location, by station, of any resources requiring special consideration for protection from sedimentation, such as wetlands, endangered and threatened species locations, or other resources involving special commitments for protection.

- *A Wetland Delineation report has been submitted and approved for this project. See the Wetland Delineation report for details.*

4. When possible, graphically indicate on a map or plan drawing the drainage areas, and soil types (via. County Soils Maps) in locations of the project to be affected by clearing and grubbing, excavation or placement of embankment. Also describe or indicate any locations in which known soil disturbance by others (e.g., for agricultural crop production) could introduce additional sediment within the project limits. Highly erodible soils will affect the complexity needed in the ESC plan.

- *See Erosion Control Plan and Cross Section sheets for graphical illustrations.*

5. When possible, graphically indicate on a map or plan drawing the locations in which routine practices such as ditch checks and perimeter silt fence will be used and indicate the type and location of other, non-routine practices recommended to use.

- *See Erosion Control Plan for locations.*

\*Note: This form is NOT to take the place of the SWPPP, but is to provide information to go into the project report for the benefit of the R.E.



**Illinois Department of Transportation**

**Erosion Control Inspection Report**

County Lake  
Section 03-00088-00-FP

Route Deerfield Parkway

District No.1  
Contract No. 83807  
Job No. C-91-266-05

Project M-8003(524)

NPDES Permit \_\_\_\_\_

Date of Inspection: \_\_\_\_\_  
Name of Inspector: \_\_\_\_\_  
Type of Inspection: Weekly \_\_\_\_\_  
>0.5" Precip. \_\_\_\_\_

Contractor: \_\_\_\_\_

Subs: \_\_\_\_\_

Are all of the temporary and permanent controls contained in the pollution prevention (erosion control) plan or as directed by the engineer in place?  Yes  No If no, why not? \_\_\_\_\_

Are the temporary and permanent erosion and sediment controls which have been installed operating correctly?  Yes  No If no, what additional controls or adjustments is the contractor hereby directed to install or perform? \_\_\_\_\_

Are the erosion and sediment controls being properly maintained?  Yes  No If no, what maintenance is the contractor hereby directed to perform? \_\_\_\_\_

Is there tracking of sediment from locations where vehicles enter and leave the project?  Yes  No If yes, describe the location(s) and the actions the contractor is hereby directed to perform. \_\_\_\_\_

Have the additional controls, adjustments or maintenance directed as result of the last inspection been implemented within seven calendar days?  Yes  No  N/A If no, the contractor is hereby notified that no further work activity will be permitted to take place until the needed corrective measures have been taken.

Location, date and type of corrective action taken for deficiencies listed above.

Other comments: \_\_\_\_\_

Orig. Project File  
c.c. Contractor

Resident

BC 2259 (Rev. 2/2000)

225

Deerfield Parkway STP Improvement  
Section No. 03-00088-00-FP  
Job No.: C-91-266-05  
Project No. M-8003(524)  
Contract No.: 83807

## PERMITS

*Final Assessment  
with PIC  
App. 12/10/04*



DEPARTMENT OF THE ARMY  
CHICAGO DISTRICT, CORPS OF ENGINEERS  
111 NORTH CANAL STREET  
CHICAGO, ILLINOIS 60606-7206

REPLY TO  
ATTENTION OF:

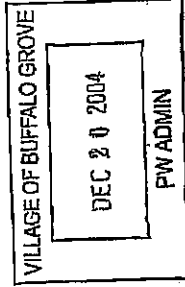
Technical Services Division  
Regulatory Branch  
200401088

DEC 13 2004

SUBJECT: Permit Application For Road Improvements Resulting In  
0.07 Acre of Wetland Impact Located On Deerfield Road Between  
Fabish Road and Green Knolls Drive in Buffalo Grove, Lake County,  
Illinois (Section 28, T36N, R10E)

Village of Buffalo Grove  
Attn: Mr. Gregory Boysen  
50 Raupp Boulevard  
Buffalo Grove, Illinois 60089

Dear Mr. Boysen:



The U.S. Army Corps of Engineers, Chicago District, has completed its review of your notification for authorization under the Regional Permit Program (RPP), submitted on your behalf by Huff and Huff, Inc.

This office has verified that your proposed activity complies with the terms and conditions of the Regional Permit 3 (Transportation Projects) and the overall RPP under Category I of the Regional Permit Program dated March 1, 2001. The activity may be performed without further authorization from this office provided the activity is conducted in compliance with the terms and conditions of the RPP.

This verification expires three (3) years from the date of this letter and covers only your activity as described in your notification and as shown on the plans entitled "Plans For Proposed Federal Aid Highway" dated August 6, 2004, prepared by Civiltech. Caution must be taken to prevent construction materials and activities from impacting waters of the United States beyond the scope of this authorization. If you anticipate changing the design or location of the activity, you should contact this office to determine the need for further authorization.

This verification does not obviate the need to obtain all other required Federal, state, or local approvals before starting work. Please note that Section 401 Water Quality Certification has been issued by IEPA for this RP. Enclosed are the IEPA Section 401 Water Quality Certification conditions. If you have any questions regarding Section 401 certification, please contact

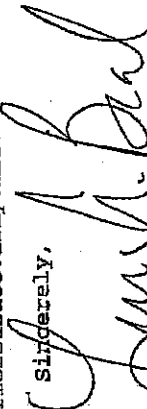


-2-

Mr. Bruce Yurdin at IEPA's Division of Water Pollution Control, Permit Section #15, by telephone at (217) 782-0610.

For a complete copy of the RPP program or any additional information on the RPP program, please access our website: [www.irc.usace.army.mil/co-r](http://www.irc.usace.army.mil/co-r). Once you have completed the authorized activity, please sign and return the enclosed compliance certification. If you have any questions, please contact Mr. Paul Leffler of my staff by telephone at (312) 846-5529 or email at [paul.m.leffler@usace.army.mil](mailto:paul.m.leffler@usace.army.mil).

Sincerely,



Melissa A. Beal  
Chief, East Section  
Regulatory Branch

Enclosure

Copy Furnished (w/o enclosure):

Lake County SMC (Mr. Hmielewski)  
Huff & Huff, Inc. (Ms. Reich)



**U.S. Army Corps of Engineers**  
Chicago District

## General Conditions Applicable to all Regional Permits

Permittees must comply with the terms and conditions of the Regional Permits and the following general conditions for all activities authorized under the RPP:

1. State 401 Water Quality Certification. Water quality certification under Section 401 of the Clean Water Act is required from the Illinois Environmental Protection Agency (IEPA). The District may consider water quality, among other factors, in determining whether to exercise discretionary authority and require an individual permit.

On October 27, 1999, the IEPA granted Section 401 certification, with conditions, for all Regional Permits except RP13 and activities in certain waterways under RPs 4 and 8 (see Appendix D). The following conditions of the certification are conditions of the RPP:

- a. The permittee shall not cause:
  - 1) violation of applicable water quality standards of the Illinois Pollution Control Board Title 35, Subtitle C: Water Pollution Rules and Regulations;
  - 2) water pollution defined and prohibited by the Illinois Environmental Protection Act; or
  - 3) interference with water use practices near public recreation areas or water supply intakes.
- b. The permittee shall provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.
- c. Any spoil material excavated, dredged or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all State statutes, regulations and permit requirements with no discharge to waters of the State unless a permit has been issued by the IEPA. Any backfilling must be done with clean material placed in a manner to prevent violation of applicable water quality standards.
- d. All areas affected by construction shall be mulched and seeded as soon after construction as possible. The permittee shall undertake necessary measures and procedures to reduce erosion during construction. Interim measures to prevent soil erosion during construction shall be taken and may include the installation of staked straw bales, sedimentation basins and temporary mulching. All construction within the waterway shall be conducted during zero to low flow conditions. The permittee shall be responsible for obtaining an NPDES Storm Water Permit prior to initiating construction if the construction activity associated with the project will result in the disturbance of five (5) or more acres, total land area. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the IEPA's Division of Water Pollution Control, Permit Section.

- e. The permittee shall implement erosion control measures consistent with the Illinois Urban Manual (IEPA/USDA, NRCS; latest version).
- f. The permittee is advised that the following permits(s) must be obtained from the IEPA: the permittee must obtain permits to construct sanitary sewers, water mains, and related facilities prior to construction.
- g. Backfill used in the stream crossing trench shall be predominantly sand or larger size material, with <20% passing a #230 U.S. sieve.
- h. Channel relocation shall be constructed under dry conditions and stabilized to prevent erosion prior to the diversion of flow. [Applicable only to projects which involve relocating stream channels.]
- i. The work shall be constructed with adequate erosion control measures (i.e., silt fences, straw bales, etc.) to prevent transport of sediment and materials to the adjoining wetlands and/or streams.
- j. Backfill used within trenches passing through surface waters of the State, except wetland areas, shall be clean coarse aggregate, gravel or other material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material may be used only if:
- 1) particle size analysis is conducted and demonstrates the material to be at least 80% sand or larger size material, using #230 U.S. sieve; or
  - 2) excavation and backfilling are done under dry conditions.
- k. Backfill used within trenches passing through wetland areas shall be clean material that will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material shall be used to the extent practicable, with the upper six (6) to twelve (12) inches backfilled with the topsoil obtained during trench excavation.
1. Any permittee proposing activities in a mined area or previously mined area shall provide determination on sediment and materials used which are considered "acid-producing material" as defined in 35 Il. Adm. Code, Subtitle D. If considered "acid-producing material," the permittee shall obtain a permit to construct pursuant to 35 Il. Adm. Code 404.101.
2. Threatened and Endangered Species. No activity is authorized under the RPP if the activity is likely to jeopardize the continued existence of a threatened or endangered species listed or proposed for listing under the Federal Endangered Species Act (ESA) or destroy, or adversely modify, the critical habitat of such species. Federal agencies should follow their own procedures for complying with the requirements of the ESA. Non-federal applicants shall notify the District if any Federally listed (or proposed for listing) endangered or threatened species or critical habitat might be affected by the activity or is located in the project area. If the District determines that the activity may affect Federally listed species or critical habitat, the activity shall not be authorized under the RPP. An individual permit will be required and the District will initiate Section 7 consultation in accordance with the ESA. If all issues pertaining to endangered and threatened species have been resolved through the consultation process to the satisfaction of the District and U.S. Fish and Wildlife Service (USEWS), the District may, at its discretion, authorize the activity under the RPP instead of an individual permit. Applicants are encouraged to obtain information on threatened or endangered species and their critical habitats from the USEWS at the earliest stages of project planning. For information, contact:

U.S. Fish and Wildlife Service  
Chicago Field Office  
1250 South Grove Avenue, Suite 103  
Barrington, Illinois 60010  
(847) 381-2253

Historic Properties. No activity is authorized under the RPP if the activity will affect properties listed, or properties eligible for listing, in the National Register of Historic Places, in accordance with the provisions of 33 CFR Part 325, Appendix C and Section 106 of the National Historic Preservation Act. Federal agencies should follow their own procedures for compliance with the requirements of the National Historic Preservation Act and other Federal historic preservation laws. Non-federal applicants should notify the District if the activity may affect historic properties which are listed, determined eligible for listing, or which the applicant has reason to believe may be eligible for listing, on the National Register of Historic Places in the project area. If the District determines that the activity may potentially affect a historic property, or a property eligible for listing, the activity shall not be authorized under the RPP and an individual permit will be required. The District will take into account the effects on such properties in accordance with 33 CFR Part 325, Appendix C. If all issues pertaining to historic properties have been resolved through the consultation process to the satisfaction of the District, Illinois Historic Preservation Agency (IHPA) and Advisory Council on Historic Preservation, the District may, at its discretion, authorize the activity under the RPP instead of an individual permit. Applicants are encouraged to obtain information on historic properties from the IHPA and the National Register of Historic Places at the earliest stages of project planning. For information, contact:

Illinois Historic Preservation Agency  
1 Old State Capitol Plaza  
Springfield, Illinois 62701-1507  
(217) 782-4836

4. Soil Erosion and Sediment Control. Measures must be taken to control soil erosion and sedimentation at the project site to ensure that sediment is not transported to waters of the U.S. during construction. Soil erosion and sediment control measures must be constructed before initiating any clearing, grading, excavating or filling activities. All temporary and permanent soil erosion and sediment control measures must be maintained during the construction period and until the site is stabilized. All exposed soil and other fills, and any work below the ordinary high water mark must be permanently stabilized at the earliest practicable date.

Applicants are required to prepare a soil erosion and sediment control (SESC) plan. The plan must be designed in accordance with the Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control ("Green Book", latest version, except chapter 6). Practice standards and specifications for measures outlined in the soil erosion and sediment control plans will follow the latest edition of the Illinois Urban Manual: A Technical Manual Designed for Urban Ecosystem Protection and Enhancement."

At the District's discretion, an applicant may be required to submit the EESC plan to the local Soil and Water Conservation District (for activities in Cook, DuPage, Kane, McHenry and Will Counties), or the Stormwater Management Commission (for activities in Lake County) for review. When the District does require submission of a SESC plan, the following applies. An activity may not be commenced until the SESC plan for the project site has been reviewed. The SWCD/SMC will review the plan and provide a written evaluation of its adequacy. A SESC plan is considered acceptable when the SWCD/SMC has found it meets technical standards. Once this determination has been made, the authorized work may commence. The SWCD/SMC may attend pre-construction meetings with the permittee and conduct inspections during

construction to determine compliance with the plans. Applicants are encouraged to begin coordinating with the appropriate SWCD/SMC office at the earliest stages of project planning. For information, contact:

Kane/DuPage SWCD  
545 S. Randall Road  
St. Charles, IL 60174  
(630) 584-7961

Will/South Cook SWCD  
1201 Gougar Road  
New Lenox, IL 60451  
(815) 462-3106

McHenry County SWCD  
1143 N. Seminary Road  
Woodstock, IL 60098  
(815) 338-0049

North Cook SWCD  
899 Jay Street  
Streamwood, IL 60120  
(847) 608-8302

Lake County SMC  
333-B Peterson Road  
Libertyville, IL 60048  
(847) 918-5260

5. **Floodplain.** Discharges of dredged or fill material into waters of the United States within the 100-year floodplain (as defined by the Federal Emergency Management Agency) resulting in permanent above-grade fills must be avoided and minimized to the maximum extent practicable. When such an above-grade fill would occur, the applicant may need to obtain approval from the Illinois Department of Natural Resources, Office of Water Resources, (IDNR-OWR) which regulates activities affecting the floodway and local government (e.g., Village or County) with jurisdiction over activities in the floodplain. Applicants are encouraged to obtain required for fill within the floodplain. Applicants are encouraged to obtain information from the IDNR-OWR and local government with jurisdiction at the earliest stages of project planning. For information on floodway construction, contact:

IDNR-OWR

Northeastern Illinois Regulatory Programs Section  
2050 W. Stearns Road  
Bartlett, Illinois 60103  
(847) 608-3100

For information on floodplain construction, please contact the local government and/or the Federal Emergency Management Agency. Pursuant to 33 CFR 320.4 (j), the District will consider the likelihood of the applicant obtaining approval for above-ground permanent fills in floodplains in determining whether to issue authorization under the RFP.

6. **Navigation.** No activity may cause more than minimal adverse effects on navigation.
7. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including that necessary to ensure public safety.
8. **Aquatic Life Movements.** No activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including species that normally migrate through the area, unless the activity's primary purpose is to impound water.
9. **Equipment.** Heavy equipment working in wetlands must be placed on mats, or other measures, such as low-ground pressure equipment, must be taken to minimize soil disturbance.
10. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status. Information on Wild and Scenic Rivers may be obtained from the appropriate land management agency in the area, such as the National Park Service and the U.S. Forest Service.

11. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, such as reserved water rights, treaty fishing and hunting rights.
12. **Water supply intakes.** No discharge of dredged or fill material may occur in the proximity of a public water supply intake except where the discharge is for repair of the public water supply intake structures or adjacent bank stabilization.
13. **Shellfish production.** No discharge of dredged or fill material may occur in areas of concentrated shellfish production.
14. **Suitable material.** No discharge of dredged or fill material may consist of unsuitable material and material discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act). Unsuitable material includes trash, debris, car bodies, and asphalt.
15. **Spawning areas.** Discharges in spawning areas during spawning seasons must be avoided to the maximum extent practicable.
16. **Obstruction of high flows.** Discharges must not permanently restrict or impede the passage of normal or expected high flows. All crossings must be culverted, bridged or otherwise designed to prevent the restriction of expected high water flows, and must be designed so as not to impede low water flows or the movement of aquatic organisms.
17. **Impacts from impoundments.** If the discharge creates an impoundment of water, adverse impacts on aquatic resources caused by the accelerated passage of water and/or the restriction of its flow must be avoided to the maximum extent practicable.
18. **Waterfowl breeding areas.** Discharges into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.
19. **Removal of temporary fills.** Any temporary fill material must be removed in its entirety and the affected area returned to its pre-existing condition.
20. **Mitigation.** Impacts to waters of the U.S. must be avoided and minimized to the maximum extent practicable at the project site. Avoidance and minimization must be attempted before compensatory wetland mitigation is considered. Compensatory mitigation will be accomplished by establishing 1.5 acres for every 1.0 acre of waters of the U.S. impacted by the project (a mitigation ratio of 1.5:1). However, if the project involves impacts to high-quality aquatic resources or is the subject of an enforcement action, the mitigation ratio will generally be greater than 1.5:1. Mitigation shall be consistent with the Memorandum of Agreement (MOA) between the Department of the Army and the Environmental Protection Agency Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines. Mitigation may consist of the following, listed in order of preference: restoration of historic wetlands that are currently non-wetlands through various actions such as modification of hydrology, introduction of appropriate native species, invasive species removal, and other management measures; creation of aquatic resources in historically upland areas; and, preservation of existing aquatic resources through real estate acquisition strategies. Careful consideration must be given to the likelihood of sustainability, practicability, availability, and reliability of compensatory mitigation. Off-site wetland mitigation may be considered where the long-term success of on-site mitigation is uncertain.
21. **Notification.** The applicant must provide written notification (i.e., a complete application) for a proposed activity to be authorized under the RFP prior to commencing a proposed activity. The District's receipt of the complete application is the date when the District receives all required notification

information (see below) from the applicant. If the District does not provide a written response to the applicant within 45 calendar days following receipt of a complete application, the applicant may presume the proposed activity qualifies for the requested Regional Permit(s), provided the activity complies with the terms and conditions of the RPP. If the District informs the applicant within 45 calendar days that the notification is incomplete (i.e., not a complete application), the applicant must submit the requested information to be considered for authorization. A new 45-day review period will commence when the District receives the requested information. Applications that involve unauthorized activities that are completed or partially completed by the applicant are not subject to the 45-day review period.

For a Category I activity, notification must include:

a. A cover letter which provides a clear project purpose and need statement, a brief description of the proposed activity, the Regional Permit(s) to be used for the activity, the area (in acres) of waters of the U.S. to be impacted, and a statement that the terms and conditions of the RPP will be followed;

b. A completed joint application form (NCR Form 426, *Protecting Illinois Waters*) signed by the applicant or agent. If the agent signs, notification must include a signed, written statement from the applicant designating the agent as its representative;

c. A delineation of waters of the U.S., including wetlands, for the project site, prepared in accordance with the current Corps of Engineers methodology and generally conducted during the growing season. The delineation must include information on the occurrence of any high-quality aquatic resources. For sites supporting wetlands, the delineation must include a Floristic Quality Assessment (Swinik and Wilhelm, 1994 (latest edition)). Plants of the Chicago Region;

d. A map showing the location of the project site;

e. Construction drawings (full- and reduced-sized) showing all aspects of the proposed activity and the location of waters of the U.S. to be impacted and not impacted. The drawings must include a detailed plan view and profile view. The drawings should also depict buffer areas, outlots, best management practices, deed restriction areas, and restoration areas, if required under the specific RP in Appendix A;

f. A preliminary soil erosion and sediment control plan;

g. Evidence that USEFWS was contacted regarding the presence of any Federally listed (or proposed for listing) endangered or threatened species or critical habitat in the area that may be affected by the proposed activity;

h. Other items listed under the specific RP(s) in Appendix A.

For a Category II activity, the notification must include all materials listed for notification for Category I above, plus:

i. A detailed description of the proposed activity;

j. A discussion of the measures taken to avoid and minimize impacts to aquatic resources on the project site;

\* If a wetland delineation is conducted during the non-growing season, the District will determine on a case-by-case basis whether sufficient evidence is available to make an accurate determination. If the District finds that a delineation lacks sufficient evidence, the application will not be considered complete until such time the information is provided. This may involve re-delineating the project site during the growing season.

k. A compensatory mitigation plan for all impacts to waters of the U.S., if compensatory mitigation is required under the specific RP.

For Category II activities, the District will, upon receipt of a complete application, provide (by facsimile transmission, email or other expeditious means), a pre-construction notice (PCN) which describes the proposed activity to the USFWS, USEPA, Illinois Department of Natural Resources, IJPA, IHZA and U.S. Coast Guard (Section 10 activities only). These agencies will then have ten (10) calendar days from the date the PCN is transmitted to contact the District if they intend to provide substantive, site-specific comments. If so contacted by an agency, the District will wait an additional fifteen (15) calendar days for agency written comments before making a decision on the notification. The District will fully consider agency comments received within the specified time frame. If the District determines the activity complies with the terms and conditions of the RPP and impacts on aquatic resources are minimal, the District will notify the applicant in writing and include any special conditions deemed necessary. If the District determines that the impacts of the proposed activity are more than minimal, the District will notify the applicant that the project does not qualify for authorization under the RPP and instruct the applicant on the procedures to seek authorization under an individual permit.

22. **Multiple use of Regional Permits.** In any case where a Regional Permit is combined with any other Regional Permit to cover a single and complete project (except where prohibited under specific Regional Permits), the applicant must notify the District in accordance with Category II. If multiple Regional Permits are used, the total impact may not exceed the maximum allowed by the Regional Permit with the greatest impact threshold.

23. **Other Restrictions.** Authorization under the RPP does not obviate the need to obtain other Federal, State or local permits, approvals, or authorizations required by law nor does it grant any property rights or exclusive privileges, authorize any injury to the property or rights of others or authorize interference with any existing or proposed Federal project.





PERMIT COMPLIANCE  
CERTIFICATION

Permit Number: 200401088

Permittee: Gregory Boysen

Date of Issuance: DEC 13 2004

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of said permit and that compensatory wetland mitigation was completed in accordance with the approved mitigation plan.

PERMITTEE \_\_\_\_\_ DATE \_\_\_\_\_

Upon completion of the activity authorized by this permit and any mitigation required by the permit, this certification must be signed and returned to the following address:

U.S. Army Corps of Engineers  
Chicago District, Regulatory Branch  
111 North Canal Street, 6th Floor  
Chicago, Illinois 60606-7206

Please note that your permitted activity is subject to compliance inspections by Corps of Engineers representatives. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.

<sup>1</sup> If compensatory mitigation was required as part of your authorization, you are certifying that the mitigation area has been graded and planted in accordance with the approved plan. You are acknowledging that the maintenance and monitoring period will begin after a site inspection by a Corps of Engineers representative or after thirty days of the Corps' receipt of this certification. You agree to comply with all permit terms and conditions, including additional reporting requirements, for the duration of the maintenance and monitoring period.



STORMWATER MANAGEMENT COMMISSION

**WATERSHED DEVELOPMENT  
PERMIT  
HAS BEEN SECURED  
WD PERMIT NUMBER 04-06-137**

Project: Deerfield Parkway Improvement

Address: IL Rte. 83 to Weiland Road  
Buffalo Grove, IL

PIN: 15-29-011---

Date Issued: 01/14/2005

Issued By: Robert D. Gardiner, P.E.

**Conditions:**

- o Work associated with improvement of Deerfield Parkway from IL Rte. 83 to Weiland Road.

**NOTICE  
TO CONTRACTORS AND OWNERS**

**POST THIS CARD AT THE SITE, VISIBLE FROM THE STREET AND SO LOCATED AS TO PERMIT THE INSPECTOR TO RECORD THE INDICATED INSPECTIONS ON THE PLACARD. DO NOT POST IN THE INTERIOR OF A BUILDING.**

**INSPECTORS AND SHERIFF'S DEPUTIES ARE INSTRUCTED TO STOP ALL WORK WHERE THIS PERMIT CARD IS NOT DISPLAYED.**

**REFER TO THE REVERSE SIDE OF THE WATERSHED DEVELOPMENT PERMIT SLIP FOR NECESSARY INSPECTIONS DURING PROGRESS OF THE WORK. ALWAYS MENTION THE WATERSHED DEVELOPMENT PERMIT NUMBER WHEN REFERRING TO THIS PROJECT. IF THIS CARD BECOMES MISLAID OR LOST PLEASE CONTACT LAKE COUNTY STORMWATER MANAGEMENT COMMISSION FOR A REPLACEMENT.**

Lake County Stormwater Management Commission (847) 918-5262



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276, 217-782-3397  
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601, 312-814-6026

ROD R. BLAGOJEVICH, GOVERNOR      RENEE CIPRIANO, DIRECTOR

217/782-3362

SEP 28 2004

Chicago District  
Corps of Engineers  
111 North Canal Street, 6th Floor  
Chicago, IL 60606

Re: Regional Permits and Conditions for Proposed Regional Permits:

- |  |   |
|--|---|
| 1. Residential, Commercial, and Institutional Developments | 8. Utility Line Projects                              |
| 2. Recreation Projects                                     | 9. Maintenance  |
| 3. Transportation Projects                                 | 10. Bank Stabilization                                |
| 4. Minor Discharge And Minor Dredging                      | 11. Marine Structures And Activities                  |
| 5. Wetland And Stream Restoration And Enhancement          | 12. Bridge Scour Protection                           |
| 6. Completed Enforcement Actions                           | 13. Cleanup Of Toxic And Hazardous Materials Projects |
| 7. Temporary Construction Activities                       |   |

Gentlemen:

The Agency has reviewed the proposed Regional Permits and Conditions for the above referenced projects submitted by the Chicago District for 2004. The following comments are provided for your use and information.

The Agency hereby issues Section 401 water quality certification for the proposed regional permits subject to the attached conditions. Water quality certification continues to be denied for those waterbodies listed for Regional Permits 4 and 8 as identified in the Proposed Modification To Regional Permit Program Request For Comments Public Notice dated March 25, 2004. In addition, water quality certification is now issued for the previously denied Regional Permit 13 subject to the following condition:

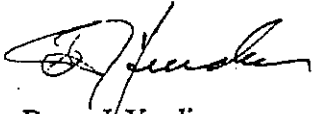
In addition to any action required of the Regional Permit 13 (Cleanup Of Toxic And Hazardous Materials Projects) applicant with respect to the "Notification" General Condition 21, the applicant shall notify the Illinois EPA, Bureau of Water, of the specific activity. This notification shall include information concerning the orders and approvals that have been or will be obtained from the Illinois EPA Bureau of Land (BOL), for all cleanup activities under BOL jurisdiction or for which authorization or approval is sought from BOL for no further remediation. This Regional Permit is not valid for activities that do not require or will not receive authorization or approval from the BOL.

ROCKFORD - 4302 North Main Street, Rockford, IL 61103 - (815) 987-7760 • DES PLAINES - 9511 W. Harrison St., Des Plaines, IL 60016 - (847) 294-4000  
 ELGIN - 595 South State, Elgin, IL 60123 - (847) 608-3131 • PEORIA - 5415 N. University St., Peoria, IL 61614 - (309) 693-5463  
 BUREAU OF LAND - PEORIA - 7620 N. University St., Peoria, IL 61614 - (309) 693-5462 • CHAMPAIGN - 2125 South First Street, Champaign, IL 61820 - (217) 278-5800  
 SPRINGFIELD - 4500 S. Sixth Street Rd., Springfield, IL 62706 - (217) 786-6892 • COLLINSVILLE - 2009 Mall Street, Collinsville, IL 62234 - (618) 346-5120  
 MARION - 2309 W. Main St., Suite 116, Marion, IL 62959 - (618) 993-7200

The determination to include the attached conditions was made with respect to the cause of water pollution as defined in the Illinois Environmental Protection Act. These comments are directed at the effect on water quality of the construction procedures involved in the project and are not an approval of any discharge resulting from the completed facility, nor an approval of the design of the facility. These comments do not supplant any permit responsibilities of the applicant towards the Agency.

If you have any questions concerning this letter, please contact me at the above referenced number and address.

Sincerely,



Bruce J. Yurdin  
Manager, Watershed Management Section  
Bureau of Water

cc: IEPA, Records Unit  
IDNR, OWR, Bartlett  
USEPA, Region 5  
CoE, Louisville District  
CoE, Memphis District  
CoE, Rock Island District  
CoE, St. Louis District  
CoE, Newburgh Regulatory Office

**Illinois Environmental Protection Agency**  
**September 13, 2004**  
Section 401 Water Quality Certification Conditions  
For Regional Permits on

- |  |  |
|--|--|
| 1. Residential, Commercial, and Institutional Developments | 8. Utility Line Projects                                 |
| 2. Recreation Projects                                     | 9. Maintenance   |
| 3. Transportation Projects                                 | 10. Bank Stabilization                                   |
| 4. Minor Discharge And Minor Dredging                      | 11. Marine Structures And Activities                     |
| 5. Wetland And Stream Restoration And Enhancement          | 12. Bridge Scour Protection                              |
| 6. Completed Enforcement Actions                           | 13. Cleanup Of Toxic And Hazardous<br>Materials Projects |
| 7. Temporary Construction Activities                       |  |

1. The applicant shall not cause:
  - a. violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulations;
  - b. water pollution defined and prohibited by the Illinois Environmental Protection Act; or
  - c. interference with water use practices near public recreation areas or water supply intakes.
2. The applicant shall provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.
3. Any spoil material excavated, dredged or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all state statutes, regulations and permit requirements with no discharge to waters of the State unless a permit has been issued by the Illinois EPA. Any backfilling must be done with clean material and placed in a manner to prevent violation of applicable water quality standards.
4. All areas affected by construction shall be mulched and seeded as soon after construction as possible. The applicant shall undertake necessary measures and procedures to reduce erosion during construction. Interim measures to prevent erosion during construction shall be taken and may include the installation of staked straw bales, sedimentation basins and temporary mulching. All construction within the waterway shall be constructed during zero or low flow conditions. The applicant shall be responsible for obtaining an NPDES Storm Water Permit prior to initiating construction if the construction activity associated with the project will result in the disturbance of 1 (one) or more acres, total land area on or after March 10, 2003. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Illinois EPA's Division of Water Pollution Control, Permit Section.
5. The applicant shall implement erosion control measures consistent with the "Illinois Urban Manual" (EPA/USDA, NRCS; 2002).
6. The applicant is advised that the following permit(s) must be obtained from the Illinois EPA: The applicant must obtain permits to construct sanitary sewers, water mains and related facilities prior to construction.

Section 401 Water Quality Certification Conditions  
Chicago District Corps of Engineers  
Regional Permit Program  
September 13, 2004

7. The backfill used in the stream crossing trench shall be predominantly sand or larger size material, with <20% passing a #230 U. S. sieve.
8. Any channel relocation shall be constructed under dry conditions and stabilized to prevent erosion prior to the diversion of flow. [Applicable only to projects which propose to relocate stream channels.]
9. The proposed work shall be constructed with adequate erosion control measures (i.e., silt fences, straw bales, etc.) to prevent transport of sediment and materials to the adjoining wetlands and/or downstream.
10. Backfill used within trenches passing through surface waters of the State, except wetland areas, shall be clean course aggregate, gravel or other material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material may be used only if:
  - a. Particle size analysis is conducted and demonstrates the material to be at least 80% sand or larger size material, using a #230 U.S. sieve; or
  - b. Excavation and backfilling are done under dry conditions.
11. Backfill used within trenches passing through wetland areas shall consist of clean material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material shall be used to the extent practicable, with the upper six (6) to twelve (12) inches backfilled with the topsoil obtained during trench excavation.
12. Any applicant that is proposing activities in a mined area or previously mined area shall provide to the Illinois EPA specifications on sediment and materials used that are considered "acid-producing material" as defined in 35 Ill. Adm. Code, Subtitle D. If considered "acid-producing material," the applicant shall obtain a permit to construct pursuant to 35 Ill. Adm. Code 404.101.
13. Asphalt, bituminous material and concrete with protruding material such as reinforcing bar or mesh shall not be 1) used for backfill, 2) placed on shorelines/streambanks, or 3) placed in waters of the State.
14. Applicants that use site dewatering techniques in order to perform work in perennial streams for construction activity approved under Regional Permits 7 (Temporary Construction Activities), 9 (Maintenance) or 12 (Bridge Scour Protection) shall maintain flow in the stream during such construction activity by utilizing dam and pumping, fluming, culverts or other such techniques.
15. In addition to any action required of the Regional Permit 13 (Cleanup Of Toxic And Hazardous Materials Projects) applicant with respect to the "Notification" General Condition 21, the applicant shall notify the Illinois EPA, Bureau of Water, of the specific activity. This notification shall include information concerning the orders and approvals that have been or will be obtained from the Illinois EPA Bureau of Land (BOL), for all cleanup activities under BOL jurisdiction or for which authorization or approval is sought from BOL for no further remediation. This Regional Permit is not valid for activities that do not require or will not receive authorization or approval from the B O L.

Deerfield Parkway STP Improvement  
Section No. 03-00088-00-FP  
Job No.: C-91-266-05  
Project No. M-8003(524)  
Contract No.: 83807

**GEOTECHNICAL/SOILS REPORTS**

**SCHLEEDE HAMPTON ASSOCIATES REPORT DATED JUNE 9, 2004**

# SCHLEEDE HAMPTON ASSOCIATES INC

June 9, 2004

Mr. Reid T. Magner  
**Civiltech Engineering, Inc.**  
450 E. Devon Avenue  
Suite 300  
Itasca, Illinois 60143

**CONSULTING ENGINEERS**

Re: Roadway Soils Survey  
**Deerfield Parkway** – IL Route 83 to Weiland Road  
Buffalo Grove, Illinois  
SHA File No. 74201

Dear Mr. Magner:

We have completed the field exploration work and analysis of the subgrade conditions for the proposed improvements on the referenced project. This report was prepared for your use in preparing the project design plans.

## Purpose

The purpose of this exploration was to determine the types of soil encountered at the proposed subgrade elevation and to determine the presence of problem subgrade materials that may require special treatments. Using this information along with the project data provided, design criteria and recommendations for earthwork and subgrade treatment have been prepared for use by the Design Engineers in preparing the plans and specifications.

## Scope

The scope of this analysis includes review of a soil survey conducted by our firm in 1990 as well as additional field exploration. Field and laboratory testing, analysis of the combined data and formulation of our recommendations are presented herein

This report was prepared on the basis of the project information supplied by the client and is only intended for use on this project. Changes in the grades or alignment of the project should be submitted for our review since changes of this kind may cause changes in our recommendations. The report was prepared by interpreting the data from the test borings and field tests made along the proposed improvements and from the results of the laboratory tests on the subsoil samples taken from there. The report gives a representative, but not exhaustive, picture of the project subsoil make-up. The soil engineer warrants findings, recommendations, specifications, and/or professional advice to have been promulgated with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology.

The field exploration included making sixteen (16) pavement cores (C-12 to C-27) and twelve (12) soil borings (B-48 to B-59) along the alignment. This information is combined with twenty-one (21) soil profile borings (B-2 to B-22) conducted previously (1990) and is presented in this report.

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### CORPORATE OFFICE

FROM / 3966 WEST DAYTON STREET, SUITE D  
REPLY  McHENRY, ILLINOIS 60050-8376  
TO: 815-578-8900 • FAX: 815-578-8862

### LABORATORY

1612 LANDMEIER ROAD, UNIT C  
 ELK GROVE VILLAGE, ILLINOIS 60007-2463  
847-228-1079 • FAX: 847-228-0633

### LABORATORY

3966 WEST DAYTON STREET, SUITE A  
 McHENRY, ILLINOIS 60050-8376  
815-385-8351 • FAX: 815-385-8456



**SCHLEEDE HAMPTON ASSOCIATES, INC.**  
**CONSULTING ENGINEERS**

Reference Documents

This soils exploration and survey was performed in accordance with the State of Illinois, 'Geotechnical Manual' dated January 1, 1999.

PROJECT LOCATION AND DESCRIPTION

Project Location

The project is located in Lake County, Sections 27, 28 and 29, T43N, R11E, in the town of Buffalo Grove, Illinois. Refer to the Project Vicinity Map, Figure 1, for project location.

Project Description

The project includes the reconstruction and widening of Deerfield Parkway from 600' east of IL Route 83 to 450' west of Weiland Road. In addition, intersection improvements and widening is planned at Buffalo Grove Road, extending approx. 1100'± in each direction-north and south of Deerfield Parkway and at Highland Grove Drive, extending approx. 350'± in each direction-north and south of Deerfield Parkway.

Climatological Data

The fieldwork for this soil survey was accomplished during the second and third week of February, 2004. The tables below lists the actual precipitation as measured at O'Hare International Airport by NOAA.

<u>Month</u>	<u>Actual Precipitation</u>	<u>Departure From Normal</u>
August, 2003	4.19"	-0.43"
September, 2003	1.72"	-1.55"
October, 2003	1.88"	-0.83"
November, 2003	4.46"	+1.45"
December, 2003	1.82"	-0.61"
January, 2004	0.91"	-0.84"

Site Geology

Geologically, the project lies in the Tinley Groundmoraine, part of the Wadsworth Member of the Wedron Formation. The soils are composed of silty and clayey glacial till.

General

The procedures for this exploration were conducted in general accordance with the appropriate Illinois Department of Transportation Standards. The borings were supervised at all times by a field engineer from the office of Schleede-Hampton Associates, Inc. The soil specimens obtained were transported to our laboratory for testing and analysis. All phases of this investigation have been directed by our project engineers.

Project Vicinity Map

Deerfield Parkway  
SHA# 74201

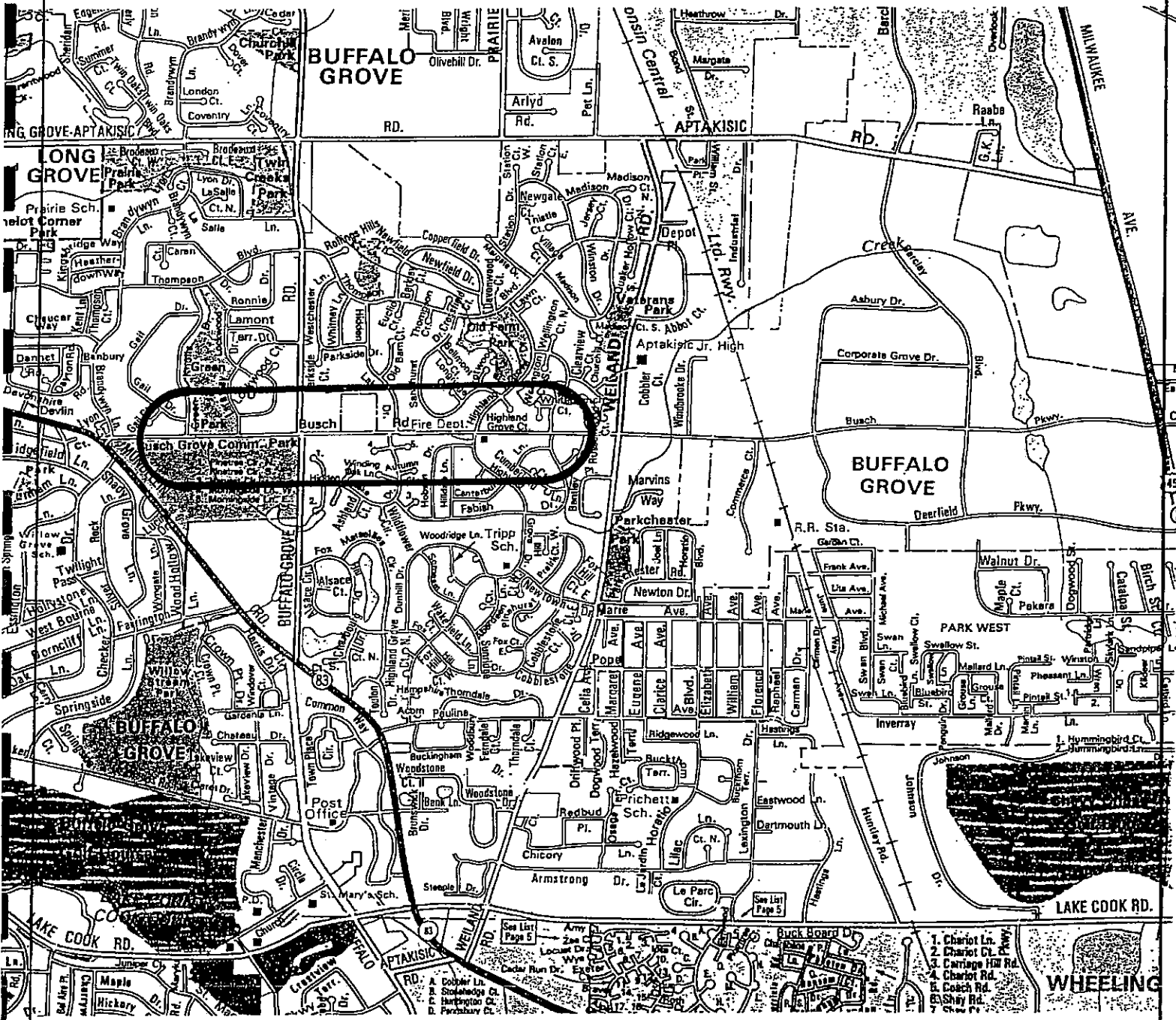


Figure 1

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**SCHLEEDE HAMPTON ASSOCIATES, INC.**  
**CONSULTING ENGINEERS**

Soil Drilling and Sampling Procedures

The recent soil borings were performed with a drilling rig equipped with a rotary head. Continuous flight augers were used to advance the holes. Representative samples of the upper profile soils were obtained by the use of split-spoon sampling methods in accordance with the ASTM procedure D 1586. Borings circa 1990 were made as auger profile borings with representative soil samples taken from the auger flights. All borings were backfilled with soil cuttings following the drilling operations.

Strength Tests

A calibrated hand penetrometer was used to aid in determining the strength and consistency of cohesive soil samples (Qp) in the field. Split spoon samples were subjected to unconfined compressive strength testing (Qu) by the Rimac Method as modified by IDOT.

Water Level Measurements

Water level observations were made during and after the boring operations and are noted on the plan profiles presented herewith. In relatively pervious, sandy soils, the water level elevations would be considered reliable. In relatively impervious, clayey soils, the accurate determination of the groundwater elevation may not be possible, even after several days of observation. Seasonal variations, temperature and recent rainfall conditions may influence the levels of the groundwater table, and volumes of water will depend on the permeability of the soils.

Pavement Cores

Pavement cores were made with a portable drill rig equipped with 4"(O.D.) diamond tipped core barrel. Pavement materials were logged in the field. The cores were retained and brought to our laboratory for further analysis and final documentation.

Laboratory Testing

A supplemental testing program was conducted to ascertain additional pertinent engineering characteristics of the subgrade materials. The soils laboratory work was performed in accordance with applicable ASTM and IDOT standards. The laboratory testing program included visual classification, unconfined compression testing and moisture content determination for each sample obtained.

The results of testing are presented in the Appendix to this report.

The soils encountered in the borings have been classified using both the IDOT Textural Classification System, and the AASHTO Engineering Soil Classification System (AASHTO, M-145) for the soil profile.

PAVEMENT CONDITIONS

Existing Pavement Materials

Deerfield Parkway-(C-12 to C-21)

The pavement encountered consisted of a full depth bituminous concrete section at 7 of 10 core locations, 6-1/4" to 13" thick. At Core C-18 the full depth bituminous concrete was found to be 4-3/4" thick. At C-16, 19 and 21, Bituminous Concrete (4-1/4" to 7") was encountered over 4-1/2" to 8" of Granular Base.

Buffalo Grove Road-(C-22 to C-24)

Pavement materials consist of 9-1/2" to 11-1/2" inches of Portland Cement Concrete over a crushed limestone Granular Based ranging from 3-1/2" to 6-1/2" thick.

Highland Grove Road-(C-25 to C-27)

Full depth Bituminous Concrete ranges from 8-1/2" to 11-1/2" thick at the core locations.

SUBSURFACE & SUBGRADE CONDITIONS

Subsurface Conditions

Deerfield Parkway (B-48 to B-52, B-2 to B-22)

Materials encountered along the alignment are generally cohesive in nature, classified as Silty Clay to Silty Clay Loam, A-6 to A-7-6. Less cohesive materials, Clay LOAM and Sandy LOAM, A-4 type soils as well as SAND with Gravel, A-1-b, are also noted at various locations. Black Silty Clay LOAM, A-7-6, loosely termed Topsoil occurs in varying thickness ranging from 6-30" in the majority of borings. Cohesive materials found are typically soft to very stiff in consistency.

Three types of soil are encountered at the proposed subgrade elevation. At three (3) boring locations, granular fill SAND with GRAVEL, A-1-b was encountered. Black Silty CLAY to Silty Clay LOAM, A-7-6 'Topsoil' was encountered at nine (9) of the boring locations at subgrade elevation. This 'Topsoil' is found to be soft to stiff in consistency, with hand penetrometer readings (Qp) of 0.5 to 1.5 tons per square foot and moisture contents between 20 and 35%. CLAY and Silty CLAY type soils were found at the remainder of the boring locations at subgrade elevation. These soils are generally soft to very stiff in consistency, with strengths (Qu/Qp) of 0.25 to 3.5 tons per square foot and moisture contents between 14 and 35%.

Buffalo Grove Road (B-56 to B-59)

Materials encountered along the alignment are generally cohesive in nature, classified as Silty CLAY, A-6 to A-7-6. SAND, A- 3 grades northward to LOAM, A-4 then

CONSULTING ENGINEERS

SILT, A-4 in a thin layer at a depth well below subgrade elevation. Cohesive materials found are typically soft to very stiff in consistency.

Soil encountered at the proposed subgrade elevation is Silty CLAY, A-6. These soils are found to be soft to very stiff in consistency, with  $Q_u$  values of 0.44 to 2.33 tons per square foot and moisture contents between 18 and 30%.

Highland Grove Drive (B52 to B-55)

Materials encountered along the alignment are classified as Silty CLAY, A-6 to A-7-6. SILT, A-4 is noted at moderate depth in B-53. Cohesive materials found are typically stiff to hard in consistency.

Soil encountered at the proposed subgrade elevation is Silty CLAY, A-6. These soils are found to be stiff to very stiff in consistency, with  $Q_p/Q_u$  values of 1.5 to 3.49 tons per square foot and moisture contents between 14 and 24%.

Details of the materials encountered and laboratory test results are presented on the Soil Profile and Soil Test Data BD-508A sheet included in the Appendix to this report.

Groundwater Conditions

Groundwater was encountered only near the intersection of Deerfield Parkway and Buffalo Grove Road at B-49, B-57, B-58 and B-59 (drilled 2004). The water is at approximate elevation 676'. Nearby borings conducted in 1990 reveal a Sandy LOAM, A-4 layer at this elevation, however no water was encountered at that time. Presumably, the water observed recently in B-49, B-57, B-58 and B-59 would also be present in nearby boreholes on Deerfield Parkway as well due to the less cohesive and therefore more permeable nature of this A-4 soil.

Subgrade Conditions

Soils encountered as the predominant subgrade materials are considered to have a Subgrade Support Rating (SSR) of 'POOR' TO 'FAIR' for full depth Bituminous and Rigid Pavement Design. Refer to Soil Test Data BD-508A sheet and Subgrade Support Rating (SSR) diagram located in the Appendix of this report. An Illinois Bearing ratio of 4.4% is considered appropriate for pavement design.

Frost Susceptibility of Subgrade Soils

The susceptibility of the subgrade soils to excessive frost action has been reviewed. The fine sand and silt content of soil found at B-4, B-19 and B-21 (65 to 70%) and the low Plasticity Indices (0 to 8) of these soils are considered susceptible to excessive frost action if encountered within the zone of frost penetration.

The predominant cohesive soils tested have lower fine sand and silt content values (41 to 62%) and higher Plasticity Indices (15 to 38) and therefore are not considered susceptible to excessive frost action. In addition groundwater was not encountered within the depth of frost penetration.

General Earthwork and Roadway Subgrade Preparation

All earthwork excavation, backfill, embankment and subgrade preparation should be conducted in accordance with the requirements of Sections 200 and 300 of the current IDOT "Standard Specifications for Road and Bridge Construction".

Remedial Treatment Areas

All undercuts must be verified by cone penetrometer tests on the subgrade during construction in accordance with the guidelines in the Illinois Department of Transportation "Subgrade Stability Manual". Areas that were identified by the borings as needing additional treatment are summarized on the following tabulation.

Summary of Special Earthwork Remedial Treatment Areas

<u>Location</u>	<u>Replacement Indicated By</u>	<u>Depth<sup>1</sup></u>	<u>Treatment Width</u>	<u>Treatment Mat'l<sup>2</sup></u>
<b>Deerfield Parkway</b>				
Sta. 15+25 to Sta. 16+77 (B-2)	Existing Treatment Mc= 6% <i>Brown SAND with Gravel, A-1-b</i>	24"	Widening	PGES
Sta. 16+77 to Sta. 19+68 (B-3)	Existing Treatment Mc= 4% <i>Brown SAND with Gravel, A-1-b</i>	24"	Widening	PGES
Sta. 19+68 to Sta. 22+63 (B-4)	Existing Treatment Mc= 3% <i>Brown SAND with Gravel, A-1-b</i>	24"	Widening	PGES
Sta. 22+63 to Sta. 25+17 (B-5)	Qp= 1.5 tsf Mc= 30% <i>Black Silty Clay LOAM, A-7-6 (TOPSOIL)</i>	24"	Widening	PGES
Sta. 25+17 to Sta. 26+68 (B-48)	Qp= 1.75-2.0 tsf Mc= 23-27% <i>Black, Dark Grey and Brown Silty CLAY, A-7-6, Fill</i>	10"	Full Width	PGES
Sta. 26+68 to Sta. 28+66 (B-6)	Existing Treatment Mc= 20-35 % <i>Brown SAND with Gravel, A-1-b</i>	12"	Widening	PGES
Sta. 28+66 to Sta. 31+64 (B-7)	Existing Treatment Mc= 4 % <i>Brown SAND with Gravel, A-1-b</i>	12"	Widening	PGES
Sta. 31+64 to Sta. 34+81 (B-8)	Qp= 1.25 tsf Mc= 35 % <i>Dark Brown CLAY, A-7-6(27)</i>	12"	Full Width	PGES

(continued)

**SCHLEEDE HAMPTON ASSOCIATES, INC.**  
**CONSULTING ENGINEERS**

Summary of Special Earthwork Remedial Treatment Areas  
(continued)

<u>Location</u>	<u>Replacement Indicated By</u>	<u>Depth<sup>1</sup></u>	<u>Treatment Width</u>	<u>Treatment Mat'l<sup>2</sup></u>
<b>Deerfield Parkway, cont'd</b>				
Sta. 34+81 to Sta. 37+78 (B-9)	Qp= 1.5 tsf Mc= 33 % <i>Black Silty Clay LOAM, A-7-6 (TOPSOIL)</i>	14"	Widening	PGES
Sta. 37+78 to Sta. 39+43 (B-10)	Qp= 1.25 tsf Mc= 28 % <i>Dark Brown CLAY, A-7-6</i>	12"	Widening	PGES
Sta. 39+43 to Sta. 40+90 (B-49)	Qp= 2.5 tsf Mc= 22 % <i>Brown Silty CLAY, A-6, Fill</i>		No Treatment Indicated	
Sta. 40+90 to Sta. 43+50 (B-11)	Qp= 1.25 tsf Mc= 14 % <i>Brown and Black Silty CLAY, A-7-6, Fill</i>	12"	Widening	PGES
Sta. 43+50 to Sta. 46+65 (B-12)	Qp= 1.5 tsf Mc= 30 % <i>Black Silty Clay LOAM, A-7-6 (TOPSOIL)</i>	24"	Widening	PGES
Sta. 46+65 to Sta. 49+55 (B-13)	Qp= 3.5 tsf Mc= 18 % <i>Brown and Black Silty CLAY, A-7-6, Fill</i>		No Treatment Indicated	
Sta. 49+55 to Sta. 52+50 (B-14)	Qp= 1.5 tsf Mc= 25 % <i>Black Silty Clay LOAM, A-7-6 (TOPSOIL)</i>	10"	Widening	PGES
Sta. 52+50 to Sta. 55+46 (B-15)	Qp= 1.5 tsf Mc= 28 % <i>Black Silty Clay LOAM, A-7-6 (TOPSOIL)</i>	10"	Full Width	PGES
Sta. 55+46 to Sta. 58+45 (B-16)	Qp= 1.0 tsf Mc= 25 % <i>Brown and Grey Silty CLAY, A-6</i>	14"	Full Width	PGES
Sta. 58+45 to Sta. 61+50 (B-17)	Qp= 2.5 tsf Mc= 14 % <i>Brown Clay LOAM, A-6(10), Fill</i>		No Treatment Indicated	
Sta. 61+50 to Sta. 63+75 (B-18)	Qp= 0.25 tsf Mc= 27 % <i>Brown and Grey Silty CLAY, A-6</i>	18"	Full Width	PGES

(continued)

**SCHLEEDE HAMPTON ASSOCIATES, INC.**  
**CONSULTING ENGINEERS**

Summary of Special Earthwork Remedial Treatment Areas  
 (continued)

<u>Location</u>	<u>Replacement Indicated By</u>	<u>Depth<sup>1</sup></u>	<u>Treatment Width</u>	<u>Treatment Mat<sup>2</sup></u>
<b>Deerfield Parkway, cont'd</b>				
Sta. 63+75 to Sta. 65+25 (B-50)	Qu= 1.2 tsf Mc= 22 % <i>Brown and Dark Grey Silty CLAY, A-6, Fill</i>	12"	Full Width	PGES
Sta. 65+25 to Sta. 67+50 (B-19)	Qp= 0.25 tsf Mc= 27 % <i>Brown and Grey Silty Clay LOAM, A-4(3)</i>	18"	Full Width	PGES
Sta. 67+50 to Sta. 70+50 (B-20)	Qp= 1.5 tsf Mc= 15 % <i>Brown and Grey Silty CLAY, A-6</i>	10"	Full Width	PGES
Sta. 70+50 to Sta. 72+38 (B-21)	Qp= 0.5 tsf Mc= 31 % <i>Black Silty Clay LOAM, A-7-6 (TOPSOIL)</i>	18"	Full Width	PGES
Sta. 72+38 to Sta. 73+88 (B-51)	N= 23 bpf Mc= 5 % <i>Brown and Grey LOAM, A-2-4, Fill</i>		No Treatment Indicated	
Sta. 73+88 to Sta. 74+50 (B-22)	Qp= 1.0 tsf Mc= 25 % <i>Black Silty Clay LOAM, A-7-6 (TOPSOIL)</i>	24"	Full Width	PGES
<b>Buffalo Grove Road</b>				
Sta. 109+23 to Sta. 116+85 (B-56)	Qu= 2.3 tsf Mc= 19 % <i>Brown and Grey Silty CLAY, A-6, Fill</i>		No Treatment Indicated	
Sta. 116+85 to Deerfield Parkway (B-57)	Qu= 0.65 tsf Mc= 27 % <i>Brown, Grey and Dark Grey Silty CLAY, A-6</i>	16"	Widening	PGES
Deerfield Parkway to Sta. 123+08 (B-58)	Qu= 0.44 tsf Mc= 28 % <i>Black, Dark Grey and Greenish Grey Silty CLAY, A-6, Fill</i>	18"	Widening	PGES
Sta. 123+08 to Sta. 131+04 (B-59)	Qu= 0.44 tsf Mc= 17 % <i>Brown, Grey and Dark Grey Silty CLAY, A-6</i>	18"	Widening	PGES

(continued)



CONSULTING ENGINEERS

Summary of Special Earthwork Remedial Treatment Areas  
(continued)

<u>Location</u>	<u>Replacement Indicated By</u>	<u>Depth<sup>1</sup></u>	<u>Treatment Width</u>	<u>Treatment Mat'l<sup>2</sup></u>
<b>Highland Grove Drive</b>				
Sta. 203+48 to Sta. 204+50 (B-52)	Qp= 1.5 tsf Mc= 22 % <i>Brown Silty CLAY, A-6</i>	10"	Widening	PGES
Sta. 204+50 to Deerfield Pkwy (B-53)	Qu=2.33 tsf Mc= 24 % <i>Brown and Grey Silty CLAY, A-6</i>		No Treatment Indicated	
Deerfield Pkwy to Sta. 209+50 (B-54)	Qu= 2.72 tsf Mc= 17 % <i>Brown Silty CLAY, A-6</i>		No Treatment Indicated	
Sta. 209+50 to Sta. 210+45 (B-55)	Qu= 3.49 tsf Mc= 14 % <i>Brown and Grey Silty CLAY, A-6</i>		No Treatment Indicated	

<sup>1</sup> = Depth refers to depth of remedial treatment below the design subgrade elevation.

<sup>2</sup> = Replacement Materials or Treatment:

Embankment Material and placement in accordance with Sections 205, 207 and Reoccurring Special Provisions

EMB - Embankment (205)

PGES - Porous Granular Embankment Subgrade

Subgrade Treatment Plan Notes

Porous Granular Embankment, Subgrade (PGES) should be specified for use at the locations indicated for soils that tend to be unsuitable or unstable. The actual need for removal and replacement with PGES will be determined in the field at the time of construction by the geotechnical engineer. All potentially unstable soils should be tested with a static cone penetrometer and treated in accordance with Article 301.03 and the undercut guidelines in the IDOT Subgrade Stability Manual. If unstable and/or unsuitable material is encountered, the soil shall be removed and replaced with PGES or Embankment as determined by the geotechnical engineer. If unstable and/or unsuitable material is not encountered, then the quantity shall be deducted and no additional compensation will be due to the contractor.

Transverse or longitudinal drains at the outside edge of the pavement may be installed at low points to drain the Aggregate Subgrade. Pipe underdrains should be installed in accordance with Section 601 of the Standard Specifications, adopted January 1, 2002, placed at a depth of 30 inches below the top of proposed pavement, in a wrapped fabric trench, backfilled with modified CA16 aggregate (Check Sheet #25 of the Recurring Special Provisions; adopted January 1, 2003).

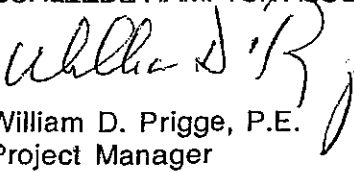
**SCHLEEDE HAMPTON ASSOCIATES, INC.**  
**CONSULTING ENGINEERS**

Closure

Thank you for the opportunity to be of continuing service. Please contact us if you have any questions regarding the information contained in this report.

Very truly yours,

SCHLEEDE-HAMPTON ASSOCIATES, INC.

  
William D. Prigge, P.E.  
Project Manager

Appendix

**APPENDIX**

SOIL PROFILES  
(SHEETS 1 TO 19)

RECORD OF SUBSURFACE EXPLORATION (Boring Logs)  
(B-52 THROUGH B-55)

PAVEMENT CORE MEASUREMENT LOG  
(C-12 THROUGH C-27)

SOIL TEST DATA SHEET BD-508A

IBR TEST DATA

GENERAL NOTES

## RECORD OF SUBSURFACE EXPLORATION

BORING B-52

PAGE 1 OF 1

PROJECT NAME Deerfield Parkway  
 SHA PROJECT NO. 74201  
 SITE LOCATION Buffalo Grove, Illinois  
 - Highland Grove Drive: Station: 203+26, 24' R

DATE STARTED 02/19/2004  
 DATE COMPLETED 02/19/2004  
 DRILLER BMX BORING METHOD CFA  
 GW ENCOUNTERED WHILE DRILLING None  
 GROUNDWATER, AT COMPLETION Dry  
 GROUNDWATER, AFTER - DAY -  
 HOLE CAVED, - AT -

ELEV.	DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Wc	Remarks
	SURFACE	0						
	Silty CLAY, dk brown, A-7-6							
	Silty CLAY, brown, stiff, A-6		1 SS	22	-	1.5	17	
		5	2 SS	10	- 1.33	1.5 2.0	12 23	
	Silty CLAY, grey, stiff, A-6							
	Silty Clay LOAM, brown, stiff to very stiff, A-2-6		3 SS	8	-	1.5	17	
		10	4 SS	16	2.23 1.24	2.25 2.25	16 21	
	Silty Clay LOAM, brown and grey, stiff, A-2-6							
	End of Boring @ 10.0'							

**SYMBOLS**

N: STANDARD PENETRATION, BLWS/FT.  
 Qu: UNCONFINED COMPRESSIVE STRENGTH, TONS/SQ. FT.  
 Wc: WATER CONTENT, %  
 LL: LIQUID LIMIT, %  
 PI: PLASTICITY INDEX, %  
 Dc: NATURAL DRY DENSITY, LBS./CU. FT.  
 Qp: HAND PENETROMETER, TONS/SQ. FT.  
 GW: GROUND WATER

**SAMPLE DESIGNATION**

SS- DRIVEN SPLIT SPOON 1 3/8" I.D., 2" O.D.  
 ST- PRESSED SHELBY TUBE  
 AU- AUGER SAMPLE  
 RC- ROCK CORE - NXM  
 BORING METHOD  
 HSA- HOLLOW STEM AUGER  
 CFA- CONTINUOUS FLIGHT AUGERS  
 C- CASING  
 MD- MUD DRILLING

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

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## RECORD OF SUBSURFACE EXPLORATION

BORING B-53 PAGE 1 OF 1

PROJECT NAME Deerfield Parkway  
 SHA PROJECT NO. 74201  
 SITE LOCATION Buffalo Grove, Illinois  
Highland Grove Drive: Station 206+18, 19' L

DATE STARTED 02/12/2004  
 DATE COMPLETED 02/12/2004  
 DRILLER BMX BORING METHOD CFA  
 GW ENCOUNTERED WHILE DRILLING None  
 GROUNDWATER, AT COMPLETION Dry  
 GROUNDWATER, AFTER - DAY -  
 HOLE CAVED, - AT -

ELEV.	DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Wc	Remarks
	<b>SURFACE</b>	0						
	Silty CLAY, black, A-7-6							
	Silty CLAY, brown and grey, very stiff to stiff, A-6		1 SS	11	2.33		24	
		5	2 SS	9	1.33	1.75	30	
	SILT, brown and grey, medium dense, A-4		3 SS	24	-	1.5	14	
	Silty CLAY, brown, hard, A-6	10	4 SS	24	5.04	3.25	19	
	End of Boring @ 10.0'							

**SYMBOLS**

N: STANDARD PENETRATION, BLWS/FT.  
 Qu: UNCONFINED COMPRESSIVE STRENGTH, TONS/SQ. FT.  
 Wc: WATER CONTENT, %  
 LL: LIQUID LIMIT, %  
 PI: PLASTICITY INDEX, %  
 Dd: NATURAL DRY DENSITY, LBS./CU. FT.  
 Qp: HAND PENETROMETER, TONS/SQ. FT.  
 GW: GROUNDWATER

**SAMPLE DESIGNATION**

SS- DRIVEN SPLIT SPOON 1 3/8" I.D., 2" O.D.  
 ST- PRESSED SHELBY TUBE  
 AU- AUGER SAMPLE  
 RC- ROCK CORE - NXM  
 BORING METHOD  
 HSA- HOLLOW STEM AUGER  
 CFA- CONTINUOUS FLIGHT AUGERS  
 C- CASING  
 MD- MUD DRILLING

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## RECORD OF SUBSURFACE EXPLORATION

BORING B-54

PAGE 1 OF 1

PROJECT NAME Deerfield Parkway  
 SHA PROJECT NO. 74201  
 SITE LOCATION Buffalo Grove, Illinois  
Highland Grove Drive: Station 208+52, 20' R

DATE STARTED 02/18/2004  
 DATE COMPLETED 02/18/2004  
 DRILLER BMX BORING METHOD CFA  
 GW ENCOUNTERED WHILE DRILLING None  
 GROUNDWATER, AT COMPLETION Dry  
 GROUNDWATER, AFTER - DAY -  
 HOLE CAVED, - AT -

ELEV.	DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Wc	Remarks
	SURFACE	0						
	Silty CLAY, black, A-7-6, Topsoil (10")		1 AU				27	
	Silty CLAY, brown to brown and grey, very stiff, A-6		1 SS	21	2.72	2.0	17	
		5	2 SS	13	1.16	1.5	19	
			3 SS	25	3.26	2.0	15	
		10	4 SS	38	-	4.5+	11	
	End of Boring @ 10.0'							

**SYMBOLS**  
 N: STANDARD PENETRATION, BLWS/FT.  
 Qu: UNCONFINED COMPRESSIVE STRENGTH, TONS/SQ. FT.  
 Wc: WATER CONTENT, %  
 LL: LIQUID LIMIT, %  
 PI: PLASTICITY INDEX, %  
 Dd: NATURAL DRY DENSITY, LBS./CU. FT.  
 Qp: HAND PENETROMETER, TONS/SQ. FT.  
 GW: GROUND WATER

**SAMPLE DESIGNATION**  
 SS- DRIVEN SPLIT SPOON 1 3/8" I.D., 2" O.D.  
 ST- PRESSED SHELBY TUBE  
 AU- AUGER SAMPLE  
 RC- ROCK CORE - NXM  
**BORING METHOD**  
 HSA- HOLLOW STEM AUGER  
 CFA- CONTINUOUS FLIGHT AUGERS  
 C- CASING  
 MD- MUD DRILLING

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

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## RECORD OF SUBSURFACE EXPLORATION

BORING B-55 PAGE 1 OF 1

PROJECT NAME Deerfield Parkway  
 SHA PROJECT NO. 74201  
 SITE LOCATION Buffalo Grove, Illinois  
Highland Grove Drive: Station 211+55, 11'L

DATE STARTED 02/19/2004  
 DATE COMPLETED 02/19/2004  
 DRILLER BMX BORING METHOD CFA  
 GW ENCOUNTERED WHILE DRILLING None  
 GROUNDWATER, AT COMPLETION Dry  
 GROUNDWATER, AFTER - DAY -  
 HOLE CAVED, - AT -

ELEV.	DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Wc	Remarks
	<b>SURFACE</b>	0						
	Bituminous Concrete (10")							* Frozen
	Silty Clay LOAM, brown, A-6, Fill		1 SS	32*	3.49	*	11 14	
	Silty CLAY, brown and grey, very stiff, A-6		2 SS	42*	-	1.5	11	
	Silty CLAY, brown, very stiff to hard, A-6	5	3 SS	16	3.26	2.0	18	
			4 SS	20	5.04	3.5	17	
	End of Boring @ 10.0'	10						

**SYMBOLS**

N: STANDARD PENETRATION, BLWS/FT.  
 Qu: UNCONFINED COMPRESSIVE STRENGTH, TONS/SQ. FT.  
 Wc: WATER CONTENT, %  
 LL: LIQUID LIMIT, %  
 PI: PLASTICITY INDEX, %  
 Dd: NATURAL DRY DENSITY, LBS/CU. FT.  
 Qp: HAND PENETROMETER, TONS/SQ. FT.  
 GW: GROUND WATER

**SAMPLE DESIGNATION**

SS- DRIVEN SPLIT SPOON 1 3/8" I.D., 2" O.D.  
 ST- PRESSED SHELBY TUBE  
 AU- AUGER SAMPLE  
 RC- ROCK CORE - NXM  
**BORING METHOD**  
 HSA- HOLLOW STEM AUGER  
 CFA- CONTINUOUS FLIGHT AUGERS  
 C- CASING  
 MD- MUD DRILLING

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**PAVEMENT CORE MEASUREMENT LOG****Deerfield Parkway****Core No. C-12****Location**

Sta. 18+06, 17' L

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 2	2	Good
Bituminous Surface	2 to 3- 1/2	1- 1/2	Good
Bituminous Binder	3- 1/2 to 5- 1/2	2	Fair
Bituminous Binder	5- 1/2 to 9	3- 1/2	Poor, deteriorated
Subgrade	9 to 24+		Black Silty CLAY, A-7-6, Mc=25%, Qp=1.0 tsf

**Core No. C-13****Location**

Sta. 24+00, 11' R

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 1- 1/4	1- 1/4	Good
Bituminous Binder	1- 1/4 to 3	1- 3/4	Fair
Bituminous Surface	3 to 4- 1/2	1- 1/2	Good
Bituminous Binder	4- 1/2 to 11- 3/4	7- 1/4	Good
Obstruction at 12"			

**Core No. C-14****Location**

Sta. 31+83, 8' L

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 1- 1/4	1- 1/4	Fair
Bituminous Surface	1- 1/4 to 2- 1/4	1	Fair
Bituminous Binder	2- 1/4 to 6- 1/4	4	Fair
Subgrade	6- 1/4 to 24+		Dk Brown Silty CLAY, A-6, Mc=16%, Qp=1.0 tsf

**Core No. C-15****Location**

Sta. 36+47, 0' R

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 1	1	Good
Bituminous Surface	1 to 2- 1/2	1- 1/2	Good
Bituminous Surface	2- 1/2 to 3- 1/2	1	Fair
Bituminous Surface	3- 1/2 to 8- 1/2	5	Fair
Bituminous Binder	8- 1/2 to 13	4- 1/2	Fair
Subgrade	13 to 24+		Black and dk brown Silty CLAY, A-6, Mc=19%, Qp=1.0 tsf

**Core No. C-16****Location**

Sta. 42+00, 2' L

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 1- 3/4	1- 3/4	Good
Bituminous Surface	1- 3/4 to 3- 1/4	1- 1/2	Good
Bituminous Surface	3- 1/4 to 4- 3/4	1- 1/2	Fair
Bituminous Binder	4- 3/4 to 7	2- 1/4	Fair
Granular Base	7 to 15	8	Brown Sand with Gravel, A-1-b, Mc=6%
Subgrade	15 to 24+		Black Silty CLAY, Mc=18%, Qp=1.5 tsf



**PAVEMENT CORE MEASUREMENT LOG****Deerfield Parkway****Core No. C-17****Location**

Sta. 46+00, 36' R

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 2	2	Good
Bituminous Binder	2 to 3- 3/4	1- 3/4	Good
Bituminous Binder	3- 3/4 to 6- 1/2	2- 3/4	Good
Bituminous Binder	6- 1/2 to 9- 1/2	3	Fair
Subgrade	9- 1/2 to 24+		Greenish Grey Silty CLAY, A-6, Mc=20%, Qp=2.0 tsf

**Core No. C-18****Location**

Sta. 50+50, 2' L

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 1- 1/4	1- 1/4	Good
Bituminous Surface	1- 1/4 to 2- 1/2	1- 1/4	Fair
Bituminous Binder	2- 1/2 to 4	1- 1/2	Fair
Bituminous Binder	4 to 4- 3/4	3/4	Fair
Subgrade	4- 3/4 to 24+		Black Silty CLAY, A-6, Mc=28%, Qp=1.75 tsf

**Core No. C-19****Location**

Sta. 60+00, 11' R

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 1- 1/4	1- 1/4	Good
Bituminous Surface	1- 1/4 to 2- 1/4	1	Fair
Bituminous Surface	2- 1/4 to 3	3/4	Fair
Bituminous Binder	3 to 4- 1/4	1- 1/4	Fair
Granular Base	4- 1/2 to 9	4- 1/2	Brown SAND with Gravel, A-1-b
Subgrade	9 to 24+		Dk brown and black Silty CLAY, A-6, Mc=28%, Qp=1.0 tsf

**Core No. C-20****Location**

Sta. 63+05, 4' L

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 1	1	Good
Bituminous Binder	1 to 2- 1/2	1- 1/2	Good
Bituminous Binder	2- 1/2 to 5- 1/4	2- 3/4	Good
Bituminous Binder	5- 1/4 to 10- 1/2	5- 1/4	Good
Subgrade	10- 1/2 to 24+		Black Silty CLAY, A-6, Mc=20%, Qp=1.25 tsf

**Core No. C-21****Location**

Sta. 66+73, 24' R

<b>Material</b>	<b>Depth(in.)</b>	<b>Thickness(in.)</b>	<b>Remarks/Condition</b>
Bituminous Surface	0 to 1- 1/4	1- 1/4	Good
Bituminous Surface	1- 1/4 to 2- 1/2	1- 1/4	Fair
Bituminous Binder	2- 1/2 to 5- 1/2	3	Fair
Granular Base	5- 1/2 to 13	7- 1/2	Brown SAND with Gravel, A-1-b
Subgrade	13 to 24+		Black Silty CLAY, A-7-6, Mc=27%, Qp=1.5 tsf

PAVEMENT CORE MEASUREMENT LOG

## Buffalo Grove Road

Core No. C-22Location

Sta. 117+00, 12' R

Material

<u>Material</u>	<u>Depth(in.)</u>	<u>Thickness(in.)</u>	<u>Remarks/Condition</u>
P.C. Concrete	0 to 9- 1/2	9- 1/2	Good
Granular Subbase	9- 1/2 to 13	3- 1/2	Crushed Limestone, A-1-a, Mc=13%
Subgrade	13 to 24+		Brown & grey Silty CLAY, A-6, Mc=21%, Qp=1.5 tsf

Core No. C-23Location

Sta. 121+80, 17' L

Material

<u>Material</u>	<u>Depth(in.)</u>	<u>Thickness(in.)</u>	<u>Remarks/Condition</u>
P.C. Concrete	0 to 10- 1/2	10- 1/2	Good
Granular Subbase	10- 1/2 to 17	6- 1/2	Crushed Limestone, A-1-a, Mc=14%
Subgrade	17 to 24+		Grey Silty CLAY, A-6, Mc=12%, Qp=1.5 tsf

Core No. C-24Location

Sta. 123+00, 13' R

Material

<u>Material</u>	<u>Depth(in.)</u>	<u>Thickness(in.)</u>	<u>Remarks/Condition</u>
P. C. Concrete	0 to 11- 1/2	11- 1/2	Good
Granular Base	11- 1/2 to 17	5- 1/2	Crushed Limestone, A-1-a, Mc=12%
Subgrade	17 to 24+		Black Silty CLAY, A-6, Mc=20%, Qp=1.5 tsf

PAVEMENT CORE MEASUREMENT LOG

## Highland Grove Parkway

Core No. C-25Location

Sta. 204+79, 11' L

MaterialDepth(in.)Thickness(in.)Remarks/Condition

Bituminous Surface	0	to 1- 1/2	1- 1/2	Good
Bituminous Binder	1- 1/2	to 5- 1/2	4	Good
Bituminous Binder	5- 1/2	to 9- 1/2	4	Good
Granular Subbase	9- 1/2	to 17	7- 1/2	Brown SAND with Gravel, Fill, A-1-b, Mc=8%
Subgrade	17	to 24+		Brown and grey Silty CLAY, A-6, Mc=16%, Qp=1.0 tsf

Core No. C-26Location

Sta. 207+51, 11' L

MaterialDepth(in.)Thickness(in.)Remarks/Condition

Bituminous Surface	0	to 1	1	Good
Bituminous Surface	1	to 2- 1/4	1- 1/4	Good
Bituminous Binder	2- 1/4	to 4	1- 3/4	Good
Bituminous Binder	4	to 7- 1/2	3- 1/2	Good
Bituminous Binder	7- 1/2	to 11- 1/2	4	Good
Subgrade	11- 1/2	to 16	4- 1/2	Brown Silty Clay LOAM, A-6, Fill, Mc=16%
Subgrade	16	to 24+		Dk grey Silty Clay LOAM, A-6, Mc=26%, Qp=1.0 tsf

Core No. C-27Location

Sta. 209+40, 5' R

MaterialDepth(in.)Thickness(in.)Remarks/Condition

Bituminous Surface	0	to 1	1	Fair
Bituminous Surface	1	to 2	1	Fair
Bituminous Binder	2	to 5	3	Fair
Bituminous Binder	5	to 8- 1/2	3- 1/2	Fair
Subgrade	8- 1/2	to 15	6- 1/2	Brown Silty Clay LOAM, A-6, Fill, Mc=13%
Subgrade	15	to 24+		Brown Silty CLAY, A-6, Mc=16%, Fill, Qp=1.5 tsf

STATE OF ILLINOIS  
 Department of Public Works and Buildings  
 Division of Highways

SOIL TEST DATA

SHA JOB NUMBER: 74201 ROUTE: --- PROJECT: Deerfield Parkway  
 SECTION: \_\_\_\_\_ CITY: Buffalo Grove, Illinois  
 COUNTY: Lake County

LAB. NO.	B-3, S-3	B-4, S-3	B-5, S-3	B-6, S-2	B-8, S-2	B-12, S-2
STATION	18+24	21+12	24+14	27+15	33+11	45+00
OFFSET	2' R	14' R	12' L	22' R	21' L	12' R
DEPTH	5.0'	4.0'	5.5'	3.5'	3.5'	2.0'
HRB CLASSIFICATION	A-4(0)	A-4(0)	A-6(15)	A-7-6(12)	A-7-6(27)	A-7-6
GRAIN SIZE CLASSIFICATION	Sandy LOAM	Clay LOAM	Silty Clay LOAM	Silty Clay LOAM	CLAY	Silty Clay LOAM
GRADATION-PASSING 1" SIEVE %	100	100	100	100	100	
" 3/4" " %	100	100	100	100	100	
" 1/2" " %	92	100	97	100	100	
" NO. 4 " %	74	99	96	100	100	
" NO. 10 " %	66	97	93	99	99	
" NO. 40 " %	52	86	89	90	98	
" NO. 100 " %	46	68	82	80	94	
" NO. 200 " %	42	58	78	75	91	
SAND %	24	39	15	24	8	
SILT %	31	37	50	54	48	
CLAY %	11	21	28	21	43	
LIQUID LIMIT %	20	26	37	44	50	
PLASTICITY INDEX %	5	1	22	15	27	
SSR RATING	POOR	POOR	POOR	POOR	FAIR	
BEARING RATIO						
STD. DRY DENSITY AASHTO T99 pcf						
OPTIMUM MOISTURE %						

REMARKS:

ORGANIC CONTENT T-194 % - - - - - 4.4%



BD-508A  
 REV. 2-65  
 Mod.12-90SHA

STATE OF ILLINOIS  
 Department of Public Works and Buildings  
 Division of Highways

SOIL TEST DATA

SHA JOB NUMBER: 74201 ROUTE: -- PROJECT: Deerfield Parkway  
 SECTION: \_\_\_\_\_ CITY: Buffalo Grove, Illinois  
 COUNTY: Lake County

LAB. NO.	BR	B-56, 2 SS	B -58, 3SSA		
STATION	Various	115+50	121+65		
OFFSET	-	36' R	31' R		
DEPTH	1.0'-3.0'	3.5'-5.0'	6.0'-6.4'		
HRB CLASSIFICATION	A-6(14)	A-7-6(41)	A-4(1)		
GRAIN SIZE CLASSIFICATION	Clay LOAM	CLAY	LOAM		
GRADATION-PASSING 1" SIEVE %	100	100	100		
" 3/4" " %	100	100	100		
" 1/2" " %	97	100	100		
" NO. 4 " %	92	100	94		
" NO. 10 " %	89	100	89		
" NO. 40 " %	83	99	76		
" NO. 100 " %	76	98	60		
" NO. 200 " %	74	97	54		
SAND %	15	3	35		
SILT %	45	49	40		
CLAY %	29	48	14		
LIQUID LIMIT %	37	58	22		
PLASTICITY INDEX %	21	38	7		
SSR RATING	POOR	FAIR	POOR		
BEARING RATIO	4.4	-	-		
STD. DRY DENSITY AASHTO T99 pcf	111.4	-	-		
OPTIMUM MOISTURE %	17.8	-	-		

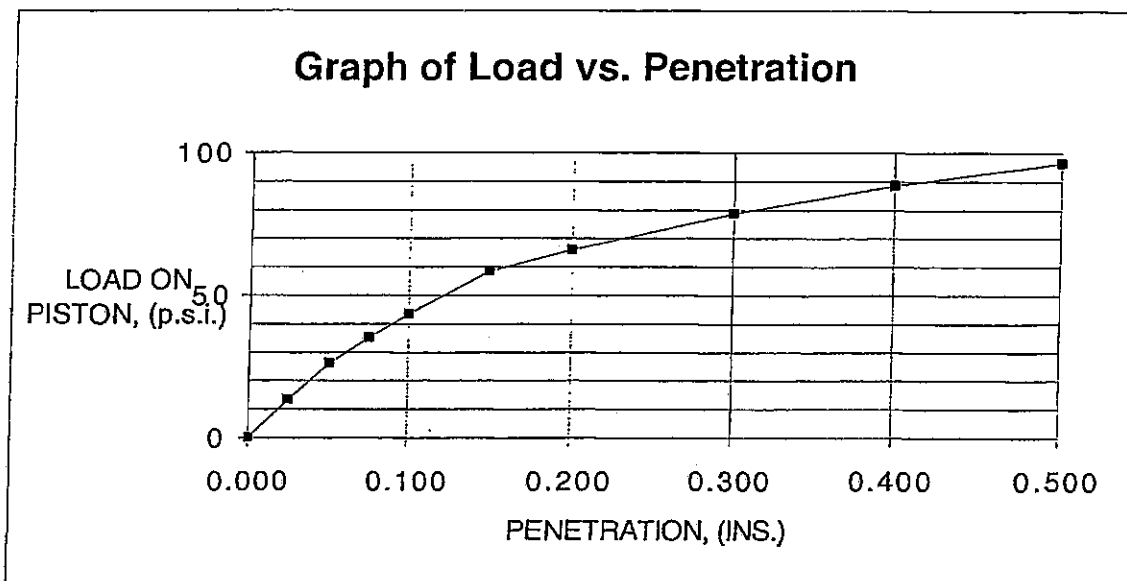
REMARKS: - - -  
 ORGANIC CONTENT T-194 % - - -

265

FILE NO.:	74201
PROJECT NAME:	Deerfield Parkway
SAMPLE I.D.:	Various borings
CLASSIFICATION:	Brown Clay LOAM, A-2-4
MAX.UNIT WT.:	111.4 P.C.F.
OPT. M.C.:	17.8 %
TEST UNIT WT.:	111.3 P.C.F.
TEST INIT. M.C.:	18.9 %
TEST% of MAX.	99.9 %

RAW LOAD/PENETRATION DATA		
Penetration, (INS.)	Dial Gage ReadingX0.001	Load,lbs
0	0.00	0.0
0.025	19.00	40.1
0.05	37.00	78.1
0.075	50.00	105.5
0.1	62.00	130.8
0.15	83.00	175.1
0.2	94.00	198.3
0.3	112.00	236.3
0.4	126.00	265.9
0.5	137.00	289.1

BEARING RATIO RESULTS TO GRAPH		
Penetration, (INS.)	Load on Piston, (PSI)	IBR,@penetration
0.000	0	
0.025	13	
0.050	26	
0.075	35	
0.100	44	4.4%
0.150	58	
0.200	66	4.4%
0.300	79	
0.400	89	
0.500	96	



## GENERAL NOTES

### PARTICLE SIZE DESCRIPTION & TERMINOLOGY

Coarse Grained or Granular Soils have more than 50% of their dry weight retained on a #200 sieve; they are described as: boulders, cobbles, gravel or sand. Fine Grained soils have less than 50% of their dry weight retained on a #200 sieve; they are described as: clays or clayey silts if they are cohesive and silts if they are non-cohesive. In addition to gradation, granular soils are defined on the basis of their relative in-place density and the fine grained soils on the basis of their strength or consistency and their plasticity.

Major Component of Sample	Size Range	Descriptive Term of Components Also Present in Sample	Approximate Quantity (Percent)
Boulders	Over 8 in. (200 mm)		
Cobbles	8 inches to 3 inches (200 mm to 75mm)	Trace	1 - 9
Gravel	3 inches to #10 sieve (75mm to 2.00mm)	Little	10 - 19
Sand	#10 to #200 sieve (2.00mm to 75mm)	Some	20 - 34
Silt	Passing #200 sieve (75mm to 2mm)	And	35 - 50
Clay	Smaller than 2mm		

### RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

#### GRANULAR SOILS

DENSITY CLASSIFICATION	APPROXIMATE RANGE OF N *
Very Loose	0 - 3
Slightly Dense	4 - 9
Medium Dense	10 - 29
Dense	30 - 49
Very Dense	50 - 80
Extremely Dense	80 +

#### COHESIVE SOILS

CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH, $Q_u$ - TSF	APPROXIMATE RANGE OF N *
Very Soft	0.25	0 - 2
Soft	0.25 - 0.49	3 - 4
Firm	0.50 - 0.99	5 - 8
Stiff	1.00 - 1.99	9 - 15
Very Stiff	2.00 - 3.99	16 - 30
Hard	4.00 - 8.00	31 - 50
Very Hard	8.00 +	Over 50

\* **STANDARD PENETRATION TEST (ASTM D1586)** - A 2.0" outside-diameter, split barrel sampler is driven into undisturbed soil by means of a 140 pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven 3 successive 6 inch increments. The total number of blows required for the final 12 inches of penetration is the Standard Penetration Resistance (N).



**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 wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator 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 contractor's 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

### **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.il.gov/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.il.gov/desenv/subsc.html>.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.