

**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.

# 52

RETURN WITH BID

Proposal Submitted By
Name
Address
City

## Letting September 21, 2007

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

### NOTICE TO PROSPECTIVE BIDDERS

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

(SEE INSTRUCTIONS ON THE INSIDE OF COVER)

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



**Illinois Department  
of Transportation**

Springfield, Illinois 62764

**Contract No. 83964  
COOK County  
Section 00-00173-00-FP (Wilmette)  
Route FAU 3509 (Sheridan Road)  
Project M-TE-D1(781)  
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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Questions Regarding	Call
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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 \_\_\_\_\_  
\_\_\_\_\_

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

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

**Contract No. 83964  
COOK County  
Section 00-00173-00-FP (Wilmette)  
Project M-TE-D1(781)  
Route FAU 3509 (Sheridan Road)  
District 1 Construction Funds**

**Improvement consists of roadway reconstruction and resurfacing, storm sewer and drainage structure adjustments and installation, sanitary sewer, water main, roadway lighting, traffic signal installation, landscaping and striping from 10th Street to Isabella Street and along Isabella Street from the CTA tracks for 0.27 mile all located in the village of Wilmette and the city of Evanston.**

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-91-184-00  
PPS NBR - 1-10509-0000

ILLINOIS DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF PRICES  
CONTRACT NUMBER - 83964  
ECMS002 DTGECM03 ECMR003 PAGE 1  
RUN DATE - 08/24/07  
RUN TIME - 183307

COUNTY NAME	CODE	DIST	SECTION NUMBER	PROJECT NUMBER	ROUTE
COOK	031	01	00-00173-00-FP (WILMETTE)	M-TE-00D1/781/000	FAU 3509

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	CENTS	TOTAL PRICE DOLLARS	CTS
B2006374	T-SYRG RET IS CL 10'	EACH	1.000	X	=		
C2011036	S-SYRINGA PAT MK 3'	EACH	58.000	X	=		
D2000918	E-JUNIP HOR HU 18	EACH	17.000	X	=		
E20150G2	V-HYDRAN ANA PET 2G	EACH	110.000	X	=		
K0030450	PERENNIAL PL DAF BULB	UNIT	2.000	X	=		
K0036120	MULCH PLACEMENT 4	SQ YD	405.000	X	=		
XX000479	WATER MAIN REMOV 6	FOOT	5,220.000	X	=		
XX000598	COMB SEW REM 12	FOOT	3,818.000	X	=		
XX000876	LUM METAL HAL HM 250W	EACH	15.000	X	=		
XX001249	ORNAMENTAL FENCE	FOOT	175.000	X	=		
XX001306	SIDEWALK REM & REPL	SQ FT	600.000	X	=		
XX001470	SAN SERVICE CONN	EACH	170.000	X	=		
XX002948	TEMPORARY ACCESS WALK	EACH	35.000	X	=		
XX003219	UNIT PAVERS	SQ FT	6,640.000	X	=		
XX003668	PRECONSTRUCT VID TAP	L SUM	1.000	X	=		

FAU 3509  
 00-00173-00-FP (WILMETTE)  
 COOK

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT NUMBER - 83964

ECMS002 DTGECM03 ECMR003 PAGE 2  
 RUN DATE - 08/24/07  
 RUN TIME - 183307

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
XX003885	IRRIGATION SYSTEM	L SUM	1.000	=		
XX005279	SAN S DIP, CL 52, 15"	FOOT	287.000	=		
XX005434	WATER SERVICE LINE SP	FOOT	3,598.000	=		
XX005642	GATEWAY MON SIGN COMP	EACH	4.000	=		
XX005929	TRAF SIGL P 14FT SPL	EACH	5.000	=		
XX005930	TRAF SIGL P 15FT SPL	EACH	1.000	=		
XX005931	TRAF SIGL P 16FT SPL	EACH	2.000	=		
XX005932	TRAF SIGL P 18FT SPL	EACH	1.000	=		
XX006937	GROUND ROD 5/8 X 10	EACH	2.000	=		
XX007066	E-JUN SAB #5 CONTAIN	EACH	24.000	=		
XX007067	E-TAX X MED 30 B & B	EACH	18.000	=		
XX007068	S- ROS RED RIB 18 CON	EACH	56.000	=		
XX007069	P ALCHE MOLLIS 1 CON	EACH	69.000	=		
XX007070	P HEMEROCAL CC 1 CON	EACH	38.000	=		
XX007071	P HEMEROCAL HLB 1 CON	EACH	38.000	=		

FAU 3509  
 00-00173-00-FP (WILMETTE)  
 COOK

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT NUMBER - 83964

ECMS002 DTGECM03 ECMR003 PAGE 3  
 RUN DATE - 08/24/07  
 RUN TIME - 183307

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
XX007072	P HEMEROCAL JOV 1 CON	EACH	38.000 X	=		
XX007073	P HOS VENT AU-MAR #1C	EACH	68.000 X	=		
XX007074	LANTANA CAMARA CV 1QT	EACH	46.000 X	=		
XX007075	P-SED SPECT AF 1 CONT	EACH	81.000 X	=		
XX007076	P-SORGH NUT SB 2 CONT	EACH	23.000 X	=		
XX007077	BULB ALL GLOB TS BULB	EACH	27.000 X	=		
XX007078	VV TO BE LINED	EACH	2.000 X	=		
XX007079	CONCRETE RIBBON	FOOT	1,410.000 X	=		
XX007080	COMBINED SEW REM 10	FOOT	1,362.000 X	=		
XX007081	SEWER LATERAL CLEAN	EACH	166.000 X	=		
XX007082	SS WM REQ 33"	FOOT	204.000 X	=		
XX007083	MAN SAN 7 DIA T1F CL	EACH	1.000 X	=		
XX007084	LT P A 35MH 10DA SPL	EACH	13.000 X	=		
XZ127900	RETAINING WALL REMOV	FOOT	436.000 X	=		
X0301335	WATER MAIN REMOV 8	FOOT	100.000 X	=		

FAU 3509  
 00-00173-00-FP (WILMETTE)  
 C00K

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT NUMBER - 83964

ECMS002 DTGECM03 ECMR003 PAGE 4  
 RUN DATE - 08/24/07  
 RUN TIME - 183307

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
X0320164	FUR SOLDIER PILES	FOOT	920.000	=		
X0320374	PLUG EX SAN SEWERS	EACH	6.000	=		
X0320591	SAN MAN REMOVED	EACH	37.000	=		
X0320772	WATER MAIN REMOV 12	FOOT	60.000	=		
X0321478	MAIN EX LT SYS COMP	L SUM	1.000	=		
X0321556	SANITARY MANHOLE ADJ	EACH	12.000	=		
X0322033	STORM SEW WM REQ	FOOT	1,234.000	=		
X0322034	STORM SEW WM REQ	FOOT	344.000	=		
X0322035	STORM SEW WM REQ	FOOT	142.000	=		
X0322089	STORM SEW WM REQ	FOOT	330.000	=		
X0322090	STORM SEW WM REQ	FOOT	381.000	=		
X0322124	STORM SEW WM REQ	FOOT	15.000	=		
X0322125	STORM SEW WM REQ	FOOT	470.000	=		
X0322126	STORM SEW WM REQ	FOOT	598.000	=		
X0322127	STORM SEW WM REQ	FOOT	76.000	=		

FAU 3509  
 00-00173-00-FP (WILMETTE)  
 C00K

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT NUMBER - 83964

ECMS002 DTGECM03 ECMR003 PAGE 5  
 RUN DATE - 08/24/07  
 RUN TIME - 183307

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
X0322789	TV INSP - NEW SAN SEW	FOOT	7,297.000	=		
X0322923	SEGMENT CONC BLK WALL	SQ FT	274.000	=		
X0323199	SAN SEW, DUCT IRN, 10	FOOT	630.000	=		
X0323200	SAN SEW, DUCT IRN, 12	FOOT	1,675.000	=		
X0323426	SED CONT DR ST INL CL	EACH	382.000	=		
X0323484	DRILL/SET SOLDIER PIL	CU FT	3,562.000	=		
X0323827	WATER MAIN REMOV 10	FOOT	20.000	=		
X0323828	WATER MAIN REMOV 16	FOOT	20.000	=		
X0323973	SED CONT SILT FENCE	FOOT	3,890.000	=		
X0323974	SED CONT SILT FN MAIN	FOOT	5,830.000	=		
X0324062	ENTRANCE SIGN	L SUM	2.000	=		
X0324345	COMB SEW REM 24	FOOT	676.000	=		
X0324673	WATER MAIN REMOV 24	FOOT	10.000	=		
X0324732	COMB SEW REM 15	FOOT	1,409.000	=		
X0325207	TV INSPECT OF SEWER	FOOT	14,730.000	=		



FAU 3509  
00-00173-00-FP (WILMETTE)  
C00K

ILLINOIS DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF PRICES  
CONTRACT NUMBER - 83964

ECMS002 DTGECM03 ECMR003 PAGE 6  
RUN DATE - 08/24/07  
RUN TIME - 183307

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
X0325225	BRICK PAVT REM & REPL	SQ FT	2,971.000	=			
X0325581	MAN T A 7 DIA SPL	EACH	2.000	=			
X0656100	DRIVWAY PVT REM-REPL	SQ YD	181.000	=			
X0712400	TEMP PAVEMENT	SQ YD	263.000	=			
X0839900	SAN SEW REMOV 6	FOOT	6,667.000	=			
X4021000	TEMP ACCESS- PRIV ENT	EACH	114.000	=			
X4022000	TEMP ACCESS- COM ENT	EACH	35.000	=			
X4023000	TEMP ACCESS- ROAD	EACH	31.000	=			
X8050010	SERV INSTALL GRND MT	EACH	1.000	=			
X8050015	SERV INSTALL POLE MT	EACH	2.000	=			
X8620020	UNINTER POWER SUPPLY	EACH	3.000	=			
X8730027	ELCBL C GROUND 6 1C	FOOT	1,615.000	=			
X8730250	ELCBL C 20 3C TW SH	FOOT	1,068.000	=			
Z0001050	AGG SUBGRADE 12	SQ YD	54,762.000	=			
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000	=			

FAU 3509  
 00-00173-00-FP (WILMETTE)  
 C00K

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT NUMBER - 83964

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 RUN DATE - 08/24/07  
 RUN TIME - 183307

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
Z0019600	DUST CONTROL WATERING	UNIT	300.000	=		
Z0056800	SAN SEW 6	FOOT	6,185.000	=		
Z0056900	SAN SEW 8	FOOT	29.000	=		
Z0057000	SAN SEW 10	FOOT	1,281.000	=		
Z0057100	SAN SEW 12	FOOT	715.000	=		
Z0057200	SAN SEW 15	FOOT	909.000	=		
Z0057300	SAN SEW 18	FOOT	203.000	=		
Z0057500	SAN SEW 24	FOOT	675.000	=		
Z0076600	TRAINEES	HOUR	3,000.000	=	0.80	2,400.00
20100110	TREE REMOV 6-15	UNIT	34.000	=		
20100210	TREE REMOV OVER 15	UNIT	50.000	=		
20101000	TEMPORARY FENCE	FOOT	26,461.000	=		
20101200	TREE ROOT PRUNING	EACH	366.000	=		
20101300	TREE PRUN 1-10	EACH	172.000	=		
20101350	TREE PRUN OVER 10	EACH	194.000	=		

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ILLINOIS DEPARTMENT OF TRANSPORTATION  
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 ECMS002 DTGECM03 ECMR003 PAGE 8  
 RUN DATE - 08/24/07  
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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
20200100	EARTH EXCAVATION	CU YD	28,015.000	=			
20201200	REM & DISP UNS MATL	CU YD	4,585.000	=			
20700400	POROUS GRAN EMB SPEC	CU YD	15.000	=			
20700420	POROUS GRAN EMB SUBGR	CU YD	3,500.000	=			
20800150	TRENCH BACKFILL	CU YD	16,998.000	=			
20800250	TRENCH BACKFILL SPL	CU YD	18,672.000	=			
21101615	TOPSOIL F & P 4	SQ YD	17,216.000	=			
21301072	EXPLOR TRENCH 72	FOOT	700.000	=			
25000400	NITROGEN FERT NUTR	POUND	218.000	=			
25000500	PHOSPHORUS FERT NUTR	POUND	218.000	=			
25000600	POTASSIUM FERT NUTR	POUND	218.000	=			
25200110	SODDING SALT TOLERANT	SQ YD	17,216.000	=			
25200200	SUPPLE WATERING	UNIT	510.000	=			
25300500	TOP SOIL FOR PLANTING	CU YD	270.000	=			
28000250	TEMP EROS CONTR SEED	POUND	680.000	=			

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				DOLLARS	CENTS		
28000510	INLET FILTERS	EACH	136.000	=			
35300100	PCC BSE CSE 6	SQ YD	3,614.000	=			
35300210	PCC BSE CSE 7 1/2	SQ YD	47,647.000	=			
35501308	HMA BASE CSE 6	SQ YD	506.000	=			
35501316	HMA BASE CSE 8	SQ YD	180.000	=			
40300100	BIT MATLS PR CT	GALLON	17,896.000	=			
40600982	HMA SURF REM BUTT JT	SQ YD	317.000	=			
40603085	HMA BC IL-19.0 N70	TON	7,313.000	=			
40603310	HMA SC "C" N50	TON	121.000	=			
40603340	HMA SC "D" N70	TON	4,301.000	=			
42300200	PCC DRIVEWAY PAVT 6	SQ YD	1,534.000	=			
42300400	PCC DRIVEWAY PAVT 8	SQ YD	775.000	=			
42400200	PC CONC SIDEWALK 5	SQ FT	44,784.000	=			
42400800	DETECTABLE WARNINGS	SQ FT	800.000	=			
44000100	PAVEMENT REM	SQ YD	53,581.000	=			

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
44000155	HMA SURF REM 1 1/2	SQ YD	63.000	=		
44000200	DRIVE PAVEMENT REM	SQ YD	2,740.000	=		
44000300	CURB REM	F00T	208.000	=		
44000500	COMB CURB GUTTER REM	F00T	22,648.000	=		
44000600	SIDEWALK REM	SQ FT	41,378.000	=		
44201749	CL D PATCH T1 9	SQ YD	166.000	=		
44201757	CL D PATCH T3 9	SQ YD	23.000	=		
44201759	CL D PATCH T4 9	SQ YD	2,267.000	=		
48203021	HMA SHOULDERS 6	SQ YD	168.000	=		
48301000	PROTECTIVE COAT	SQ YD	56,086.000	=		
50102400	CNC REM	CU YD	9.500	=		
50200100	STRUCTURE EXCAVATION	CU YD	264.000	=		
50202901	COFFERDAM LOCATION 1	EACH	1.000	=		
50202902	COFFERDAM LOCATION 2	EACH	1.000	=		
50300225	CNC STRUCT	CU YD	112.800	=		

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
50401205	PREC CONC CAPS	EACH	38.000	=			
50401215	PREC CONC PANEL	SQ FT	1,510.000	X			
50500505	STUD SHEAR CONNECTORS	EACH	272.000	X			
50700209	UNTREATED TIMBER LAG	SQ FT	1,531.000	X			
50800205	REINF BARS, EPOXY CTD	POUND	16,580.000	X			
51202230	FUR SOLDIER PILES WS	FOOT	862.000	X			
550A0050	STORM SEW CL A 1	FOOT	1,065.000	X			
550A0340	STORM SEW CL A 2	FOOT	206.000	X			
550A0360	STORM SEW CL A 2	FOOT	157.000	X			
550A0380	STORM SEW CL A 2	FOOT	555.000	X			
550A0410	STORM SEW CL A 2	FOOT	953.000	X			
550A0420	STORM SEW CL A 2	FOOT	938.000	X			
550A0430	STORM SEW CL A 2	FOOT	415.000	X			
550A0440	STORM SEW CL A 2	FOOT	441.000	X			
550A0450	STORM SEW CL A 2	FOOT	1,342.000	X			

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
550A0470	STORM SEW CL A 2 42	FOOT	55.000	=		
550A0490	STORM SEW CL A 2 54	FOOT	33.000	=		
550A0750	STORM SEW CL A 3 36	FOOT	805.000	=		
550A0770	STORM SEW CL A 3 42	FOOT	1,370.000	=		
550A1070	STORM SEW CL A 4 42	FOOT	653.000	=		
55100300	STORM SEWER REM 8	FOOT	1,771.000	=		
55100500	STORM SEWER REM 12	FOOT	429.000	=		
55100700	STORM SEWER REM 15	FOOT	35.000	=		
552A1100	SS JKD CL A 30	FOOT	130.000	=		
552A1500	SS JKD CL A 42	FOOT	145.000	=		
56100600	WATER MAIN 6	FOOT	684.000	=		
56100700	WATER MAIN 8	FOOT	1,821.000	=		
56100800	WATER MAIN 10	FOOT	20.000	=		
56100900	WATER MAIN 12	FOOT	5,362.000	=		
56101000	WATER MAIN 16	FOOT	4,379.000	=		

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
56101120	WATER MAIN 24	FOOT	76.000	=			
56104900	WATER VALVES 6	EACH	3.000	=			
56105000	WATER VALVES 8	EACH	29.000	=			
56105100	WATER VALVES 10	EACH	1.000	=			
56105200	WATER VALVES 12	EACH	11.000	=			
56105300	WATER VALVES 16	EACH	10.000	=			
56400300	FIRE HYDNTS TO BE ADJ	EACH	2.000	=			
56400500	FIRE HYDNTS TO BE REM	EACH	19.000	=			
56400820	FIRE HYD W/AUX V & VB	EACH	27.000	=			
59100100	GEOCOMPOSITE WALL DR	SQ YD	123.000	=			
60107600	PIPE UNDERDRAINS 4	FOOT	22,976.000	=			
60109580	P UNDR FOR STRUCT 4	FOOT	301.000	=			
60203210	CB TA SPEC 4D T11F&G	EACH	6.000	=			
60203240	CB TA SPEC 4D T23F&G	EACH	29.000	=			
60206140	CB TA SPEC 5D T23F&G	EACH	1.000	=			



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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
60207605	CB TC T8G	EACH	3.000	=		
60210413	CB TC SPL T23F&G	EACH	59.000	=		
60220400	MAN TA SPL 4D T1F CL	EACH	8.000	=		
60223100	MAN TA SPL 5D T1F CL	EACH	48.000	=		
60223700	MAN TA 6 DIA T1F OL	EACH	1.000	=		
60224200	MAN TA SPL 6D T1F CL	EACH	2.000	=		
60226600	MAN DT 5 DIA T1F CL	EACH	1.000	=		
60226730	MAN DT 6 DIA T1F CL	EACH	2.000	=		
60228110	MAN SAN 4 DIA T1F CL	EACH	36.000	=		
60228120	MAN SAN 5 DIA T1F CL	EACH	3.000	=		
60228130	MAN SAN 6 DIA T1F CL	EACH	1.000	=		
60228300	DROP SAN MAN T1F CL	EACH	11.000	=		
60238900	INLETS TA SPL T1F OL	EACH	1.000	=		
60239600	INLETS TA SPL T11F&G	EACH	1.000	=		
60239713	INLETS TA SPL T23F&G	EACH	22.000	=		

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
60248700	VV TA 4 DIA T1F CL	EACH	54.000	=		
60250200	CB ADJUST	EACH	5.000	=		
60255500	MAN ADJUST	EACH	14.000	=		
60260100	INLETS ADJUST	EACH	9.000	=		
60265700	VV ADJUST	EACH	15.000	=		
60266500	VV REMOVED	EACH	17.000	=		
60266600	VALVE BOX ADJ	EACH	10.000	=		
60403600	GRATES SPEC	EACH	2.000	=		
60406000	FR & LIDS T1 OL	EACH	10.000	=		
60406100	FR & LIDS T1 CL	EACH	10.000	=		
60500040	REMOV MANHOLES	EACH	4.000	=		
60500050	REMOV CATCH BAS	EACH	77.000	=		
60500060	REMOV INLETS	EACH	20.000	=		
60500405	FILL VALVE VLTS	EACH	36.000	=		
60500705	CB FILL TO MAIN FLOW	EACH	1.000	=		

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
60600605	CONC CURB TB	FOOT	2,418.000	=			
60603800	COMB CC&G TB6.12	FOOT	22,686.000	=			
60605900	COMB CC&G TB9.12	FOOT	360.000	=			
60608300	COMB CC&G TM2.12	FOOT	440.000	=			
60624600	CORRUGATED MED	SQ FT	32.000	=			
61139900	STORM SEWER SPEC 6	FOOT	6,214.000	=			
63000000	SPBGR TY A	FOOT	38.000	=			
63100045	TRAF BAR TERM T2	EACH	4.000	=			
63100167	TR BAR TRM T1 SPL TAN	EACH	2.000	=			
63200310	GUARDRAIL REMOV	FOOT	116.000	=			
66410400	CH LK FENCE REM & RE	FOOT	870.000	=			
67000400	ENGR FIELD OFFICE A	CAL MO	18.000	=			
67100100	MOBILIZATION	L SUM	1.000	=			
70101700	TRAF CONT & PROT	L SUM	1.000	=			
70300100	SHORT-TERM PAVT MKING	FOOT	21,250.000	=			

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
70300220	TEMP PVT MK LINE 4	FOOT	244,234.000	=			
70300280	TEMP PVT MK LINE 24	FOOT	1,620.000	=			
70300510	PAVT MARK TAPE T3 L&S	SQ FT	2,455.000	=			
70300520	PAVT MARK TAPE T3 4	FOOT	15,195.000	=			
70300570	PAVT MARK TAPE T3 24	FOOT	840.000	=			
70301000	WORK ZONE PAVT MK REM	SQ FT	19,610.000	=			
72000100	SIGN PANEL T1	SQ FT	1,143.000	=			
72400100	REMOV SIN PAN ASSY TA	EACH	222.000	=			
72400310	REMOV SIGN PANEL T1	SQ FT	575.000	=			
72400500	RELOC SIN PAN ASSY TA	EACH	5.000	=			
72900100	METAL POST TY A	FOOT	635.000	=			
72900200	METAL POST TY B	FOOT	974.000	=			
78000100	THPL PVT MK LTR & SYM	SQ FT	2,622.000	=			
78000200	THPL PVT MK LINE 4	FOOT	26,160.000	=			
78000400	THPL PVT MK LINE 6	FOOT	20,004.000	=			

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
78000600	THPL PVT MK LINE 12	FOOT	351.000	=			
78000650	THPL PVT MK LINE 24	FOOT	503.000	=			
78003110	PREF PL PM TB LINE 4	FOOT	656.000	=			
78003130	PREF PL PM TB LINE 6	FOOT	533.000	=			
78100100	RAISED REFL PAVT MKR	EACH	437.000	=			
78200410	GUARDRAIL MKR TYPE A	EACH	12.000	=			
78201000	TERMINAL MARKER - DA	EACH	2.000	=			
78300100	PAVT MARKING REMOVAL	SQ FT	9,082.000	=			
81000600	CON T 2 GALVS	FOOT	751.000	=			
81000700	CON T 2 1/2 GALVS	FOOT	1,768.000	=			
81000800	CON T 3 GALVS	FOOT	33.000	=			
81001000	CON T 4 GALVS	FOOT	246.000	=			
81018500	CON P 2 GALVS	FOOT	1,279.000	=			
81018600	CON P 2 1/2 GALVS	FOOT	372.000	=			
81018900	CON P 4 GALVS	FOOT	627.000	=			

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
81400100	HANDHOLE	EACH	16.000	X	=		
81400200	HD HANDHOLE	EACH	5.000	X	=		
81400300	DBL HANDHOLE	EACH	4.000	X	=		
81400735	HANDHOLE C CONC SPL	EACH	131.000	X	=		
81603155	UD 2#6 #6G EPRRHW 1	FOOT	23,005.000	X	=		
81800230	A CBL 2-1CG MESS WIRE	FOOT	15,275.000	X	=		
81900200	TR & BKFIL F ELECT WK	FOOT	22,052.000	X	=		
83057140	LT P WD 30 CL 3	EACH	75.000	X	=		
83600200	LIGHT POLE FDN 24D	FOOT	16.000	X	=		
83600400	POLE FOUNDATION METAL	EACH	27.000	X	=		
84200600	REM EX LT U NO SALV	EACH	11.000	X	=		
84200700	LIGHTING FDN REMOV	EACH	15.000	X	=		
84400105	RELOC EX LT UNIT	EACH	15.000	X	=		
85700200	FAC T4 CAB	EACH	2.000	X	=		
85700205	FAC T4 CAB SPL	EACH	1.000	X	=		

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE
				DOLLARS	CENTS	
87301215	ELCBL C SIGNAL 14 2C	FOOT	1,882.000	=		
87301225	ELCBL C SIGNAL 14 3C	FOOT	3,699.000	=		
87301245	ELCBL C SIGNAL 14 5C	FOOT	3,134.000	=		
87301255	ELCBL C SIGNAL 14 7C	FOOT	2,684.000	=		
87301305	ELCBL C LEAD 14 1PR	FOOT	3,432.000	=		
87301805	ELCBL C SERV 6 2C	FOOT	519.000	=		
87701140	S MAA & P 20 SPL	EACH	1.000	=		
87701150	S MAA & P 22 SPL	EACH	1.000	=		
87701170	S MAA & P 26 SPL	EACH	2.000	=		
87701200	S MAA & P 32 SPL	EACH	2.000	=		
87701220	S MAA & P 36 SPL	EACH	1.000	=		
87701230	S MAA & P 38 SPL	EACH	1.000	=		
87704040	STL COMB MAA&P 22 SPL	EACH	1.000	=		
87704050	STL COMB MAA&P 24 SPL	EACH	1.000	=		
87800100	CONC FDN TY A	FOOT	40.000	=		

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	CTS
				DOLLARS	CENTS		
87800150	CONC FDN TY C	FOOT	12.000	=			
87800400	CONC FDN TY E 30D	FOOT	90.000	=			
87800415	CONC FDN TY E 36D	FOOT	60.000	=			
88030020	SH LED 1F 3S MAM	EACH	12.000	=			
88030050	SH LED 1F 3S BM	EACH	6.000	=			
88030070	SH LED 1F 4S BM	EACH	4.000	=			
88030080	SH LED 1F 4S MAM	EACH	3.000	=			
88030100	SH LED 1F 5S BM	EACH	3.000	=			
88030110	SH LED 1F 5S MAM	EACH	3.000	=			
88030210	SH LED 2F 3S BM	EACH	1.000	=			
88030240	SH LED 2F 1-3 1-5 BM	EACH	1.000	=			
88030250	SH LED 2F 1-4 1-5 BM	EACH	1.000	=			
88102717	PED SH LED 1F BM CDT	EACH	2.000	=			
88102747	PED SH LED 2F BM CDT	EACH	10.000	=			
88200210	TS BACKPLATE LOU ALUM	EACH	20.000	=			



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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE		TOTAL PRICE	
				DOLLARS	CENTS	DOLLARS	CTS
88500100	INDUCTIVE LOOP DETECT	EACH	17.000	=			
88600100	DET LOOP T1	FOOT	1,450.000	=			
88700200	LIGHT DETECTOR	EACH	7.000	=			
88700300	LIGHT DETECTOR AMP	EACH	3.000	=			
88800100	PED PUSH-BUTTON	EACH	12.000	=			
89000100	TEMP TR SIG INSTALL	EACH	3.000	=			
89502375	REMOV EX TS EQUIP	EACH	3.000	=			
89502380	REMOV EX HANDHOLE	EACH	23.000	=			
89502385	REMOV EX CONC FDN	EACH	19.000	=			
TOTAL \$							

- NOTE:
- EACH PAY ITEM SHOULD HAVE A UNIT PRICE AND A TOTAL PRICE.
  - 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.
  - IF A UNIT PRICE IS OMITTED, THE TOTAL PRICE WILL BE DIVIDED BY THE QUANTITY IN ORDER TO ESTABLISH A UNIT PRICE.
  - A BID MAY BE DECLARED UNACCEPTABLE IF NEITHER A UNIT PRICE NOR A TOTAL PRICE IS SHOWN.

## RETURN WITH BID

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

#### I. GENERAL

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

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

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

#### II. ASSURANCES

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

##### B. Felons

1. The Illinois Procurement Code provides:

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

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

##### C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

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

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

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

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

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

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

## RETURN WITH BID

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

### **D. Negotiations**

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

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

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

### **E. Inducements**

1. The Illinois Procurement Code provides:

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

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

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

1. The Illinois Procurement Code provides:

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

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

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

1. The Illinois Procurement Code provides:

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

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

### **H. Confidentiality**

1. The Illinois Procurement Code provides:

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

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

## RETURN WITH BID

### **I. Insider Information**

1. The Illinois Procurement Act provides:

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

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

### **III. CERTIFICATIONS**

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

#### **B. Bribery**

1. The Illinois Procurement Code provides:

Section 50-5. Bribery.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## RETURN WITH BID

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**G. Debt Delinquency**

1. The Illinois Procurement Code provides:

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

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

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

1. The Illinois Procurement Code provides:

Section 50-60(c).

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

**I. Addenda**

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

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

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

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

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

**NA - FEDERAL**

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

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

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

**TO BE RETURNED WITH BID**

**IV. DISCLOSURES**

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

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

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

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

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

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

**C. Disclosure Form Instructions**

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

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

**CERTIFICATION STATEMENT**

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

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

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

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

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

\_\_\_\_\_  
Date

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

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

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

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

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

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

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

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

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

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

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

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

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RETURN WITH BID/OFFER

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**Form A  
Financial Information &  
Potential Conflicts of Interest  
Disclosure**

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

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

**DISCLOSURE OF FINANCIAL INFORMATION**

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

**FOR INDIVIDUAL (type or print information)**

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

**ADDRESS** \_\_\_\_\_

**Type of ownership/distributable income share:**

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

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

(a) State employment, currently or in the previous 3 years, including contractual employment of services.

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

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

- 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 \_\_\_

---

(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 \_\_\_\_\_

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**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. 83964  
COOK County  
Section 00-00173-00-FP (Wilmette)  
Project M-TE-D1(781)  
Route FAU 3509 (Sheridan Road)  
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. 83964  
COOK County  
Section 00-00173-00-FP (Wilmette)  
Project M-TE-D1(781)  
Route FAU 3509 (Sheridan Road)  
District 1 Construction Funds**

PROPOSAL SIGNATURE SHEET

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

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

---

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

---

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

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

---

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

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

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

RETURN WITH BID



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

Item No.
Letting Date

KNOW ALL MEN BY THESE PRESENTS, That We

as PRINCIPAL, and

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

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

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

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

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

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

Notary Certification for Principal and Surety

STATE OF ILLINOIS,
COUNTY OF

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

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

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

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

My commission expires Notary Public

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

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

# PROPOSAL ENVELOPE



## PROPOSALS

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

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

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

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

### **NOTICE**

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

# CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

## NOTICE

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

**Contract No. 83964  
COOK County  
Section 00-00173-00-FP (Wilmette)  
Project M-TE-D1(781)  
Route FAU 3509 (Sheridan Road)  
District 1 Construction Funds**



**Illinois Department of Transportation**



## NOTICE TO BIDDERS

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

**Contract No. 83964  
COOK County  
Section 00-00173-00-FP (Wilmette)  
Project M-TE-D1(781)  
Route FAU 3509 (Sheridan Road)  
District 1 Construction Funds**

**Improvement consists of roadway reconstruction and resurfacing, storm sewer and drainage structure adjustments and installation, sanitary sewer, water main, roadway lighting, traffic signal installation, landscaping and striping from 10th Street to Isabella Street and along Isabella Street from the CTA tracks for 0.27 mile all located in the village of Wilmette and the city of Evanston.**

- 3. INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.  
  
(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.
- 4. AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the  
Illinois Department of Transportation

Milton R. Sees, Acting Secretary

BD 351 (Rev. 01/2003)

INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2007

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

SUPPLEMENTAL SPECIFICATIONS

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Page No.

No Supplemental Specifications this year.

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INDEX LOCAL ROADS AND STREETS SPECIAL PROVISIONS

<u>LR#</u>	<u>Title (Effective Date) (Revision Date)</u>	<u>Page #</u>
LR SD 12	"Slab Movement Detection Device" (Eff. 11/1/84) (Rev. 1/1/07).....	
LR SD 13	"Required Cold Milled Surface Texture" (Eff. 11/1/87) (Rev. 1/1/07).....	
LR SD 630	"Steel Plate Beam Guardrail" (Eff. 2/1/07). Developed to allow local agencies to continue to use 27" guardrail with 6 inch blockouts. ....	
LR SD 631	"Traffic Barrier Terminals" (Rev. 2/1/07). Developed to keep Traffic Barrier Terminals Type 1, 2 & 5A as an option for local agencies to use with 27" guardrail with 6 inch blockouts. ....	
LR SD 633	"Remove and Reerect Steel Plate Beam Guardrail" (Eff. 2/1/07). Developed to allow local agencies to replace 27" guardrail with 6 inch blockouts. ....	
LR 102	"Protests on Local Lettings" (Eff. 1/1/07). Developed to allow local agencies to adopt the department's interested party protest procedures outlined in Title 44 of the IL Administrative Code. ....	
LR 105	X "Cooperation with Utilities" (Eff 1/1/99) (Rev 1/1/07). Formerly issued as LRS 1 and was reissued as an LR Contract Special Provision based on industry concerns discussed at the Joint Coop. ....	239
LR 107-1	"Nationwide Permit No. 14" (Eff. 2/1/04) (Rev. 3/1/05). Developed to outline the necessary requirements to comply with No. 14 permits. ....	
LR 107-2	"Railroad Protective Liability Insurance for Local Lettings" (Eff. 3/1/05) (Rev 1/1/06). Developed to require insurance policies to be submitted to the letting agency rather than the department. ....	
LR 107-3	"Disadvantaged Business Enterprise Participation" (Eff. 1/1/07). Developed to require DBE utilization plans to be submitted to the local agency. ....	
LR 107-4	X "Insurance" (Rev. 8/1/07). Developed based on recommendations from IACE Policy Committee to ensure local agencies are indemnified when their projects are on the state letting. ....	242
LR 108	"Combination Bids (Eff. 1/1/94) (Rev. 3/1/05). Developed to allow the revision of working days and calendar days. Revised to incorporate applicable portions of deleted Sections 102 & 103. ....	
LR 212	"Shaping Roadway" (Eff. 8/1/69) (Rev. 1/1/02). ....	
LR 355-1	"Asphalt Stabilized Base Course, Road Mix or Traveling Plant Mix" (Eff. 10/1/73) (Rev. 1/1/07) .....	
LR 355-2	"Asphalt Stabilized Base Course, Plant Mix" (Eff. 2/20/63) (Rev. 1/1/07) .....	
LR 400	"Bituminous Treated Earth Surface (Eff. 1/1/07). Developed since Section 401 was eliminated from the 2007 Standard Specifications. ....	
LR 402	"Salt Stabilized Surface Course" (Eff. 2/20/63) (Rev. 1/1/07) .....	
LR 403-2	Bituminous Hot Mix Sand Seal Coat" (Eff. 8/1/69) (Rev. 1/1/07) .....	
LR 420	"PCC Pavement (Special)" (Eff. 5/12/64) (Rev. 1/1/07). Developed to allow local agencies to construct quality PCC pavements for low volume roads. ....	
LR 442	"Bituminous Patching Mixtures for Maintenance Use" (Eff 1/1/04) (Rev. 8/1/07). Developed to reference approved bituminous patching mixtures. ....	
LR 451	"Crack Filling Bituminous Pavement with Fiber-Asphalt" (Eff. 10/1/91) (Rev. 1/1/07) .....	
LR 503-1	"Furnishing Class SI Concrete" (Eff. 10/1/73) (Rev. 1/1/02) .....	
LR 503-2	"Furnishing Class SI Concrete (Short Load)" (Eff. 1/1/89) (Rev. 1/1/02). Developed to allow a load charge to be added when short loads are expected during the contract. ....	
LR 542	"Pipe Culverts, Type _____ (Furnished)" (Eff. 9/1/64) (Rev. 1/1/07) .....	
LR 663	"Calcium Chloride Applied" (Eff. 6/1/58) (Rev. 1/1/07) .....	
LR 702	"Construction and Maintenance Signs" (Eff 1/1/04) (Rev 6/1/07). Developed to require florescent orange sheeting and a minimum sign size of 48" X 48" on construction and maintenance signs. ....	
LR 1004	"Coarse Aggregate for Bituminous Surface Treatment" (Eff. 1/1/02) (Rev 1/1/07). Developed to provide a coarser mix when aggregate producers have adjusted the CA-16 gradation according to the Aggregate Gradation Control System (AGCS) to a finer mix for Hot-Mix Asphalt. ....	
LR 1013	"Rock Salt (Sodium Chloride)" (Eff. 8/1/69) (Rev. 1/1/02) .....	
LR 1032-1	"Penetrating Emulsions" (Eff. 1/1/07) (Rev. 2/1/07). Developed to combine Penetrating Emulsified Asphalt and Penetrating Emulsified Prime into a single special provision. ....	
LR 1032-2	"Multigrade Cold Mix Asphalt" (Eff. 1/1/07) (Rev. 2/1/07). Developed to provide the material specification for Multigrade cold mix asphalt. ....	
LR 1102	"Road Mix or Traveling Plan Mix Equipment" (Eff. 1/1/07). Developed to replace road mix and traveling plant mix bituminous equipment that was eliminated from the Standard Specifications. ....	



**GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET**

Effective: June 1, 2007

√	Pg #	File Name	Title	Effective	Revised
		GBSP4	Polymer Modified Portland Cement Mortar	June 7, 1994	June 1, 2007
		GBSP11	Permanent Steel Sheet Piling	Dec 15, 1993	Jan 1, 2007
		GBSP12	Drainage System	June 10, 1994	Jan 1, 2007
		GBSP13	High-Load Multi-Rotational Bearings	Oct 13, 1988	Jan 1, 2007
		GBSP14	Jack and Remove Existing Bearings	April 20, 1994	Jan 1, 2007
		GBSP15	Three Sided Precast Concrete Structure	July 12, 1994	June 1, 2007
		GBSP16	Jacking Existing Superstructure	Jan 11, 1993	Jan 1, 2007
		GBSP17	Bonded Preformed Joint Seal	July 12, 1994	Jan 1, 2007
		GBSP18	Modular Expansion Joint	May 19, 1994	Jan 1, 2007
		GBSP19	Reserved		
		GBSP21	Cleaning and Painting Contact Surface Areas of Existing Steel Structures	June 30, 2003	Jan 1, 2007
		GBSP22	Cleaning and Painting New Metal Structures	Sept 13, 1994	Jan 1, 2007
		GBSP25	Cleaning and Painting Existing Steel Structures	Oct 2, 2001	June 1, 2007
		GBSP26	Containment and Disposal of Lead Paint Cleaning Residues	Oct 2, 2001	Feb 2, 2007
		GBSP28	Deck Slab Repair	May 15, 1995	Feb 2, 2007
		GBSP29	Bridge Deck Microsilica Concrete Overlay	May 15, 1995	June 1, 2007
		GBSP30	Bridge Deck Latex Concrete Overlay	May 15, 1995	June 1, 2007
		GBSP31	Bridge Deck High-Reactivity Metakaolin (HRM) Conc Overlay	Jan 21, 2000	June 1, 2007
		GBSP32	Temporary Sheet Piling	Sept 2, 1994	Jan 1, 2007
		GBSP33	Pedestrian Truss Superstructure	Jan 13, 1998	Jan 1, 2007
		GBSP34	Concrete Wearing Surface	June 23, 1994	Jan 1, 2007
		GBSP35	Silicone Bridge Joint Sealer	Aug 1, 1995	Jan 1, 2007
		GBSP36	Surface Preparation and Painting Req. for Weathering Steel	Nov 21, 1997	Feb 2, 2007
		GBSP37	Underwater Structure Excavation Protection	April 1, 1995	Jan 1, 2007
		GBSP38	Mechanically Stabilized Earth Retaining Walls	Feb 3, 1999	June 1, 2007
X	243	GBSP42	Drilled Soldier Pile Retaining Wall	Sept 20, 2001	Feb 2, 2007
		GBSP43	Driven Soldier Pile Retaining Wall	Nov 13, 2002	Feb 2, 2007
		GBSP44	Temporary Soil Retention System	Dec 30, 2002	Jan 1, 2007
		GBSP45	Bridge Deck Thin Polymer Overlay	May 7, 1997	Jan 1, 2007
		GBSP46	Geotextile Retaining Walls	Sept 19, 2003	June 1, 2007
		GBSP47	High Performance Concrete Structures	Aug 5, 2002	Jan 1, 2007
		GBSP49	Reserved		
		GBSP50	Removal of Existing Non-composite Bridge Decks	June 21, 2004	Jan 1, 2007
X	249	GBSP51	Pipe Underdrain for Structures	May 17, 2000	Jan 1, 2007
X	250	GBSP52	Porous Granular Embankment (Special)	Sept 28, 2005	Jan 1, 2007
		GBSP53	Structural Repair of Concrete	Mar 15, 2006	Jan 1, 2007
		GBSP55	Erection of Curved Steel Structures	June 1, 2007	
		GBSP56	Setting Piles in Rock	Nov 14, 1996	Jan 1, 2007
		GBSP57	Temporary Mechanically Stabilized Earth Retaining Walls	Jan 6, 2003	Jan 1, 2007
		GBSP58	Mechanical Splice	Sep 21, 1995	Jan 1, 2007
		GBSP59	Diamond Grinding and Surface Testing Bridge Sections	Dec 6, 2004	Jan 1, 2007
		GBSP 60	Containment and Disposal of Non-Lead Pain Cleaning Residues	Nov 25, 2004	Jan 1, 2007
		GBSP 61	Slipform Parapet	June 1, 2007	

LIST ADDITIONAL SPECIAL PROVISIONS BELOW


**BDE SPECIAL PROVISIONS**  
For the August 3<sup>rd</sup> and September 21st, 2007 Lettings

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

<u>File Name</u>	<u>Pg#</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80099		Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2007
* 80186		Alkali-Silica Reaction for Cast-in-Place Concrete	Aug. 1, 2007	
80108		Asbestos Bearing Pad Removal	Nov. 1, 2003	
72541		Asbestos Waterproofing Membrane and Asbestos Hot-Mix Asphalt Surface Removal (NOTE: This special provision was previously named "Asbestos Waterproofing Membrane and Asbestos Bituminous Concrete Surface Removal".)	June 1, 1989	Jan. 2, 2007
80173		Bituminous Materials Cost Adjustments	Nov. 2, 2006	Jan. 2, 2007
50261		Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	Jan. 1, 2007
50481		Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	Jan. 1, 2007
50491		Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	Jan. 1, 2007
50531		Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	Jan. 1, 2007
80166	251	X Cement	Jan. 1, 2007	
80177		Digital Terrain Modeling for Earthwork Calculations	April 1, 2007	
80029	254	X Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Jan. 1, 2007
80178	262	X Dowel Bars	April 1, 2007	
80167	263	X Electrical Service Installation – Traffic Signals	Jan. 1, 2007	
80179		Engineer's Field Office Type A	April 1, 2007	
80175		Epoxy Pavement Markings	Jan. 1, 2007	
* 80189	264	X Equipment Rental Rates	Aug. 2, 2007	
80180	266	X Erosion and Sediment Control Deficiency Deduction	April 1, 2007	
* 80168	267	X Errata for the 2007 Standard Specifications	Jan. 1, 2007	Aug. 1, 2007
80169		High Tension Cable Median Barrier	Jan. 1, 2007	
80142	270	X Hot-Mix Asphalt Equipment, Spreading and Finishing Machine (NOTE: This special provision was previously named "Bituminous Equipment, Spreading and Finishing Machine".)	Jan. 1, 2005	Jan. 1, 2007
80181		Hot-Mix Asphalt – Field Voids in the Mineral Aggregate	April 1, 2007	
80136		Hot-Mix Asphalt Mixture IL-4.75 (NOTE: This special provision was previously named "Superpave Bituminous Concrete Mixture IL-4.75".)	Nov. 1, 2004	April 1, 2007
80109		Impact Attenuators	Nov. 1, 2003	Jan. 1, 2007
80110		Impact Attenuators, Temporary	Nov. 1, 2003	Jan. 1, 2007
* 80187	271	X Legal Requirements to be Reserved	Aug. 1, 2007	
80045		Material Transfer Device	June 15, 1999	Jan. 1, 2007
80165		Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2007
80082	272	X Multilane Pavement Patching	Nov. 1, 2002	
80129	273	X Notched Wedge Longitudinal Joint	July 1, 2004	Jan. 1, 2007
80182	275	X Notification of Reduced Width	April 1, 2007	
80069		Organic Zinc-Rich Paint System	Nov. 1, 2001	Jan. 1, 2007
80022	276	X Payments to Subcontractors	June 1, 2000	Jan. 1, 2006
80148	278	X Planting Woody Plants	Jan. 1, 2006	
80134	279	X Plastic Blockouts for Guardrail	Nov. 1, 2004	Jan. 1, 2007
80119		Polyurea Pavement Marking	April 1, 2004	Jan. 1, 2007
80170	280	X Portland Cement Concrete Plants	Jan. 1, 2007	
80171	282	X Precast Handling Holes	Jan. 1, 2007	
80015		Public Convenience and Safety	Jan. 1, 2000	

<u>File Name</u>	<u>Pg#</u>		<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
34261			Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
80157			Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
* 80172	284	X	Reclaimed Asphalt Pavement (RAP)	Jan. 1, 2007	Aug. 1, 2007
80160			Reflective Crack Control Treatment	April 1, 2006	Jan. 1, 2007
80183	290	X	Reflective Sheeting on Channelizing Devices	April 1, 2007	
80151	291	X	Reinforcement Bars	Nov. 1, 2005	Jan. 1, 2007
80164			Removal and Disposal of Regulated Substances	Aug. 1, 2006	Jan. 1, 2007
80184	293	X	Retroreflective Sheeting, Nonreflective Sheeting, and Translucent Overlay Film for Highway Signs	April 1, 2007	
* 80131			Seeding (NOTE: This special provision was previously named "Seeding and Sodding".)	July 1, 2004	Aug. 1, 2007
80152	299	X	Self-Consolidating Concrete for Cast-In-Place Construction	Nov. 1, 2005	Jan. 1, 2007
80132	304	X	Self-Consolidating Concrete for Precast Products	July 1, 2004	Jan. 1, 2007
80127	306	X	Steel Cost Adjustment	April 2, 2004	April 1, 2007
* 80153	310	X	Steel Plate Beam Guardrail	Nov. 1, 2005	Aug. 1, 2007
80143	311	X	Subcontractor Mobilization Payments	April 2, 2005	
80075			Surface Testing of Pavements	April 1, 2002	Jan. 1, 2007
* 80087	312	X	Temporary Erosion Control	Nov. 1, 2002	Aug. 1, 2007
80176	314	X	Thermoplastic Pavement Markings	Jan. 1, 2007	
80161	316	X	Traffic Signal Grounding	April 1, 2006	Jan. 1, 2007
20338	318	X	Training Special Provisions	Oct. 15, 1975	
80154			Turf Reinforcement Mat	Nov. 1, 2005	Jan. 1, 2007
80185			Type ZZ Retroreflective Sheeting, Nonreflective Sheeting, and Translucent Overlay Film for Highway Signs	April 1, 2007	
80162			Uninterruptable Power Supply (UPS)	April 1, 2006	Jan. 1, 2007
80149			Variable Spaced Tining	Aug. 1, 2005	Jan. 1, 2007
80163	321	X	Water Blaster with Vacuum Recovery	April 1, 2006	Jan. 1, 2007
80071	322	X	Working Days	Jan. 1, 2002	

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

80139 Portland Cement This special provision is now covered in a BMPR Policy Memorandum "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

80120 Precast, Prestressed Concrete Members This special provision is now in BMPR's "Manual for Fabrication of Precast Prestressed Concrete Products".

80145 Suspension of Slipformed Parapets This special provision is no longer required.

The following special provisions are either in the 2007 Standard Specifications or the 2007 Recurring Special Provisions:

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
80156	Aggregate Shipping Tickets	Articles 1003.01(f), 1004.01(f) & 1005.01(d)	Jan. 1, 2006	
80128	Authority of Railroad Engineer	Article 105.02	July 1, 2004	
80065	Bituminous Base Course/Widening Superpave	Sections 355, 356, 1030 & 1102	April 1, 2002	Aug. 1, 2005
80050	Bituminous Concrete Surface Course	Article 406.13(b)	April 1, 2001	April 1, 2003
80066	Bridge Deck Construction	Sections 503, 1004, 1020 & 1103	April 1, 2002	April 1, 2004

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
80118	Butt Joints	Article 406.08	April 1, 2004	April 1, 2005
80031	Calcium Chloride Accelerator for Portland Cement Concrete Patching	Recurring # 28	Jan. 1, 2001	
80077	Chair Supports	Article 421.04(a)	Nov. 1, 2002	Nov. 2, 2002
80051	Coarse Aggregate for Trench Backfill, Backfill and Bedding	Sections 208, 542, 550, 1003 & 1004	April 1, 2001	Nov. 1, 2003
80094	Concrete Admixtures	Article 1020.05(b) & Section 1021	Jan. 1, 2003	July 1, 2004
80112	Concrete Barrier	Section 637	Jan. 1, 2004	April 2, 2004
80102	Corrugated Metal Pipe Culverts	Articles 542.04(d), 1006.01(a)(4) & 1006.03(d)	Aug. 1, 2003	July 1, 2004
80114	Curing and Protection of Concrete Construction	Sections 503, 1020 & 1022	Jan. 1, 2004	Nov. 1, 2005
80146	Detectable Warnings	Section 424	Aug. 1, 2005	
80144	Elastomeric Bearings	Section 1083	April 1, 2005	
31578	Epoxy Coating on Reinforcement	Sections 420, 483 & 606	April 1, 1997	Jan. 1, 2003
80041	Epoxy Pavement Marking	Article 1095.04	Jan. 1, 2001	Aug. 1, 2003
80055	Erosion and Sediment Control Deficiency Deduction	Article 105.03(a)	Aug. 1, 2001	Nov. 1, 2001
80103	Expansion Joints	Article 420.05(d)	Aug. 1, 2003	
80101	Flagger Vests	Article 701.13	April 1, 2003	Jan. 1, 2006
80079	Freeze-Thaw Rating	Article 1004.02(f)	Nov. 1, 2002	
80072	Furnished Excavation	Section 204	Aug. 1, 2002	Nov. 1, 2004
80054	Hand Vibrator	Article 1103.17(a)	Nov. 1, 2003	
80147	Illuminated Sign	Sections 801, 891 & 1084	Aug. 1, 2005	
80104	Inlet Filters	Section 280 & Article 1081.15(h)	Aug. 1, 2003	
80080	Insertion Lining of Pipe Culverts	Section 543 & Article 1040.04	Nov. 1, 2002	Aug. 1, 2003
80150	Light Emitting Diode (LED) Pedestrian Signal Head	Sections 801, 881, & 1078	Nov. 1, 2005	April 1, 2006
80067	Light Emitting Diode (LED) Signal Head	Sections 801, 880 & 1078	April 1, 2002	Nov. 1, 2005
80081	Lime Gradation Requirements	Article 1012.03	Nov. 1, 2002	
80133	Lime Stabilized Soil Mixture	Section 310	Nov. 1, 2004	April 1, 2006
80158	Manholes	Article 1042.10	April 1, 2006	
80137	Minimum Lane Width with Lane Closure	Article 701.06	Jan. 1, 2005	
80138	Mulching Seeded Areas	Section 251 & Article 1081.06(a)(4)	Jan. 1, 2005	
80116	Partial Payments	Article 109.07	Sept. 1, 2003	
80013	Pavement and Shoulder Resurfacing	Recurring # 14	Feb. 1, 2000	July 1, 2004
53600	Pavement Thickness Determination for Payment	Articles 407.03, 407.10, 420.03, 420.15 & 421.04	April 1, 1999	Jan. 1, 2004
80155	Payrolls and Payroll Records	Recurring #1 & #5	Aug. 10, 2005	
80130	Personal Protective Equipment	Article 701.12	July 1, 2004	
80073	Polymer Modified Emulsified Asphalt	Article 1032.06	Nov. 1, 2002	
80124	Portable Changeable Message Signs	Articles 701.15(j), 701.20(h) & 1106.02(j)	Nov. 1, 1993	April 2, 2004
80083	Portland Cement Concrete	Articles 1103.01 & 1103.02	Nov. 1, 2002	
80036	Portland Cement Concrete Patching	Sections 442, 701, 1013 & 1020	Jan. 1, 2001	Jan. 1, 2004
419	Precast Concrete Products	Sections 540, 1020 & 1042	July 1, 1999	Nov. 1, 2004
80084	Preformed Recycled Rubber Joint Filler	Articles 503.02, 637.02 & 1051.10	Nov. 1, 2002	
80121	PVC Pipeliner	Recurring # 18	April 1, 2004	April 1, 2005
80159	Railroad Flaggers	Article 107.12	April 1, 2006	

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
80122	Railroad, Full-Actuated Controller and Cabinet	Articles 857.04, 1073.01(c)(2) & 1074.03(a)(5)e.	April 1, 2004	
80105	Raised Reflective Pavement Markers (Bridge)	Articles 781.03(a), 781.05 & 1096.01(b)	Aug. 1, 2003	
80011	RAP for Use in Bituminous Concrete Mixtures	Sections 1030 & 1031	Jan. 1, 2000	April 1, 2002
80032	Remove and Re-Erect Steel Plate Beam Guardrail and Traffic Barrier Terminals	Section 633	Jan. 1, 2001	Jan. 1, 2005
80085	Sealing Abandoned Water Wells	Section 672	Nov. 1, 2002	
80096	Shoulder Rumble Strips	Section 642	Jan. 1, 2003	
80140	Shoulder Stabilization at Guardrail	Article 630.06	Jan. 1, 2005	
80135	Soil Modification	Section 302	Nov. 1, 2004	April 1, 2006
80070	Stabilized Subbase and Bituminous Shoulders Superpave	Sections 312, 482, 1030 & 1102	April 1, 2002	Aug. 1, 2005
80086	Subgrade Preparation	Section 301	Nov. 1, 2002	
80010	Superpave Bituminous Concrete Mixtures	Sections 406, 407 & 1030	Jan. 1, 2000	April 1, 2004
80039	Superpave Bituminous Concrete Mixtures (Low ESAL)	Sections 406, 407 & 1030	Jan. 1, 2001	April 1, 2004
80092	Temporary Concrete Barrier	Section 704	Oct. 1, 2002	Nov. 1, 2003
80008	Temporary Module Glare Screen System	Recurring # 22	Jan. 1, 2000	
80106	Temporary Portable Bridge Traffic Signals	Recurring # 23	Aug. 1, 2003	
80098	Traffic Barrier Terminals	Section 631	Jan. 1, 2003	
57291	Traffic Control Deficiency Deduction	Article 105.03(b)	April 1, 1992	Jan. 1, 2005
80107	Transient Voltage Surge Suppression	Article 1074.03(a)(4)	Aug. 1, 2003	
80123	Truck Bed Release Agent	Article 1030.08	April 1, 2004	
80048	Weight Control Deficiency Deduction	Article 109.01	April 1, 2001	Aug. 1, 2002
80090	Work Zone Public Information Signs	Recurring # 24	Sept. 1, 2002	Jan. 1, 2005
80125	Work Zone Speed Limit Signs	Article 701.14(b)	April 2, 2004	Jan. 1, 2006
80126	Work Zone Traffic Control	Articles 701.19 & 701.20	April 2, 2004	Nov. 1, 2005
80097	Work Zone Traffic Control Devices	Section 701 & Article 1106.02	Jan. 1, 2003	Nov. 1, 2004

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

**STATE OF ILLINOIS**

**SPECIAL PROVISIONS**

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2007, (hereinafter referred to as the Standard Specifications); the latest edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" in effect on the date of invitation for bids; and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids; and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAU 3509 (Sheridan Road), Section: 00-00173-00-FP, Project No. M-TE-00D1(781) in Cook County, Village of Wilmette and City of Evanston and in case of conflict with any part of parts of said specifications, the said Special Provisions shall take precedence and shall govern.

**Location of Project**

Along Sheridan Road, the project begins at station 1004+42.60, a point on the centerline of FAU Route 3509 (Sheridan Road) at the intersection of 10<sup>th</sup> Street, and extends in a southeasterly direction for 9,944.82 feet (1.88 miles) to Isabella Street. Along Isabella Street, the project limits begin from the CTA tracks and extend in an easterly direction for 1,409.62 feet (0.27 miles).

Along Sheridan Road, there is an omission between Station 1073+87.18 and Station 1076+52.86 which is the bridge over the North Shore Channel. Along Isabella Street, there is an omission between Station 4092+58.88 and Station 4094+33.69 which is the bridge over the North Shore Channel.

The net project length along Sheridan Road is 9,679.14 feet; the gross project length is 9,944.82 feet.

**Description of Project**

This improvement consists of roadway reconstruction and resurfacing, storm sewer and drainage structure adjustments and installation, sanitary sewer, water main, roadway lighting, traffic signal installation, landscaping, striping and all incidental and collateral work as necessary to complete the improvement shown herein and as described in the specifications.

**Definitions**

"Village" - the Village of Wilmette

"City" - the City of Evanston

"Engineer" - the Resident Engineer

**Pre-Construction Open House Meeting**

Date TBD at 7:00 p.m. in Council Chambers at the Village Hall, 1200 Wilmette Avenue, Wilmette, IL 60091. The purpose of the meeting is to introduce the Contractor and Village Construction Staff to the residents. The meeting will not occur until after the project is awarded.

**Compliance with Local, State, and Federal Safety/Health Standards**

The CONTRACTOR shall read and comply with all applicable local, state, and federal safety and health standards and regulations including, but not limited to: OSHA, IDOT, EPA, IDOL.

**Permits and Licenses**

The CONTRACTOR shall obtain, at its own expense, all permits and licenses which may be required to complete the contract, and/or required by municipal, state, and federal regulations and laws. All fees shall be included in the bid, no additional compensation will be allowed.

The CONTRACTOR will be required to secure a NRI permit from the MWRDGC for Sanitary Sewer Construction.

**The CONTRACTOR must obtain a Village of Wilmette Business License before any work commences.**

**Public Convenience and Safety**

In addition to the requirements of Article 107.09 of the Standard Specifications, the Contractor shall maintain entrances, side roads, and PCC sidewalks along the proposed improvement; interference with traffic movements and inconvenience to owners of abutting property and 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. It is understood that the streets involved may have to be closed for short periods of time during excavation and placement of base course. Residents who have P.C.C. driveway aprons, proposed curb and gutter and sidewalk in front of their driveways will not have access until the concrete has cured.

Construction signs referring to temporary lane closures during work hours shall be removed or covered during the non-work hours. Excavation along the edge of pavement or other obstructions within 15 feet of the edge of pavement shall be barricaded during non-work hours.

The Contractor shall plan his work so that there will be no open holes in the pavement overnight and that all barricades will be removed from the pavement during non-work hours.

During all construction operations, the Contractor will be required to provide, erect and maintain proper signage and barricades plus provide flagmen as necessary for safe traffic control.

All provisions relating to traffic control, signage, barricades and the use of flagmen shall be subject to the approval of the Engineer.

To insure that safe and efficient traffic control and protection is provided at all times, the Contractor shall provide to the Village, City and the Engineer the telephone number of his employee or agent who is responsible for traffic control and protection and shall confirm that this representative will be available at any time, day or night, to correct, add to or modify any traffic control devices or provisions to assure safe and efficient traffic operations.

The Contractor will not be allowed to close any street to through travel without the prior approval of the Engineer. The Contractor will be required to provide all warning signs, barricades, traffic cones, flagmen and other appurtenances as the Engineer deems necessary to guarantee the safety of motorists and pedestrians during construction.

The contractor shall at the end of every working day leave no open holes, broken pavement, trenches over 3 inches deep and 4 inches wide or other hazards adjacent to the roadway or within the closed lane of the roadway. If open holes, broken pavement, trenches over 3 inches in depth and 4 inches wide or other hazards are present adjacent to the roadway or within the closed lane of a roadway, the contractor shall furnish and install an approved barrier to prevent access to the hazard.

This work will not be paid for separately but shall be considered as incidental to the Contract and no extra compensation will be allowed.

**Protection and Restoration of Property**

In addition to the requirements of Article 107.20 of the Standard Specifications, the existing drainage facilities shall remain in use during the period of construction, unless otherwise noted in the Contract Plans.

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

All drainage structures are to be kept free from any 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 accumulation of 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.



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

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

#### Water

The contractor may use Village fire hydrants only if **all** of the following requirements are met:

- 1) The contractor can pick-up a Village issued water meter and RPZ device at the Village Yard located at 711 Laramie Avenue. Contact 847.853.7500. The Village has a **limited** number of meters and RPZ devices and if none are available the Contractor will be responsible for supplying their own meter and RPZ device.
- 2) A \$1,500 deposit (cash, check, Visa, MC) and a meter loan permit are required before a Village meter and RPZ device will be issued. The deposit will be refunded if the meter and RPZ are returned in good condition. The permits are obtained in the Engineering Department at 1200 Wilmette Avenue. Contact 847.853.7660.
- 3) Village of Wilmette water may **not** be used without the use of a water meter **and** a RPZ device.
- 4) All water used by contractors **must** be recorded **and** reported to the Village of Wilmette.

#### Emergency Numbers

The contractor shall provide the Village and City Engineer, prior to beginning construction, with the name and phone number of a contact person that will be available for quick response for after hours emergencies. If that person does not respond within 4 hours of the call, then the Village and/or City shall hire or use other personnel to remedy the emergency and deduct all costs incurred from the payments due the contractor.

#### Preconstruction Video Taping

The Contractor shall prepare pre-construction video documentation of all features in the area affected by construction. All video cameras, recorders, tapes, accessories and appurtenances

shall be high quality VHS or DVD format equipment. Pre-construction documentation shall consist of a series of high resolution color audio-video tapes (or DVDs) showing all areas affected by construction. All pertinent features within the construction's zone of influence shall be shown, including but not limited to, pavements, curbs, driveways, sidewalks, buildings, landscaping, trees, shrubbery, fences, light posts, and equipment, etc. View orientation shall be maintained by audio commentary on the audio track of each video tape (or DVD) to help explain what is being viewed. Video taping of existing sidewalk shall be documented from a point of view directly above the existing sidewalk, and not from the roadway, in order to show a clear view of the existing conditions. The pre-construction video tape (or DVD) shall be completed and copies submitted to the Village of Wilmette for approval prior to commencing with any construction activities.

This work shall be measured and paid for at the Contract unit price per lump sum, for PRECONSTRUCTION VIDEO TAPING, which price shall be considered payment in full for completing this work as specified herein.

#### **Driveway Access**

The CONTRACTOR shall maintain ingress and egress to all abutting properties during construction operations except for a maximum period of 4 calendar days after new concrete curb, driveway pavement or sidewalk is poured. Residents shall be notified as minimum of 48 hours prior to this period.

#### **Maintenance of Roadways**

Effective: September 30, 1985

Revised: November 1, 1996

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

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

**Completion Date Plus Guaranteed Working Days**

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

"When a completion date plus guaranteed working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on July 3, 2009 except as specified herein.

The Contractor will be allowed to complete all clean-up work and punch list items within 15 guaranteed working days after the completion date for opening the roadway to traffic. Under extenuating circumstances the Engineer may direct that certain items of work, not affecting the safe opening of the roadway to traffic, may be completed within the guaranteed working days allowed for clean up work and punch list items. Temporary lane closures for this work may be allowed at the discretion of the Engineer."

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

**Interim Completion Dates**

The Contractor shall schedule his operations so as to complete all Pre-Stage work, as described on the Maintenance of Traffic Typical Sections and Notes sheets, and have all existing lanes safely open to traffic by 11:59 P.M. on March 14, 2008.

The Contractor shall also schedule his operations so as not to start Stage 1 until March 15, 2008 and to complete all Stage 1 work (Lake Avenue to Isabella Street), as described on the Maintenance of Traffic Typical Sections and Notes sheets, and open the roadway to two-way traffic by 11:59 P.M. on August 31, 2008.

The Contractor shall also schedule his operations so as not to start Stage 2A work until the completion of Stage 1B and to complete all Stage 2A work (10<sup>th</sup> Street to Lake Avenue, west side), as described on the Maintenance of Traffic Typical Sections and Notes sheets, and open the roadway to two-way traffic by 11:59 P.M. on November 28, 2008.

The contractor shall note that these interim completion dates are based on an expedited schedule. Article 108.09 of the Standard Specifications or Special Provision for Failure to Complete the Work on Time, shall apply to these interim completion dates.

**Work Restrictions**

Isabella Street construction shall take place in the spring of 2009 to minimize disruption to Northwestern University football game traffic.

FAU 3509 (Sheridan Road)  
 10<sup>th</sup> Street to Isabella Street  
 Section: 00-00173-00-FP  
 Village of Wilmette / City of Evanston  
 Cook County

The disruption of water service to all commercial properties will only be allowed between the hours of 10:00 P.M. and 4:00 A.M. The Engineer, Village, and property owner must be notified 48 hours prior to any disruption of water service.

**Concrete Breakers**

When removing pavement, curb and gutter, shoulder, and/or any other structures, the use of any type of concrete breakers which might damage the underground public or private utilities will not be permitted. Under no circumstances will the use of a frost ball be permitted.

**Status of Utilities to be Adjusted**

Effective: January 30, 1987      Revised: July 1, 1994

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

<u>Name of Utility</u>	<u>Type</u>	<u>Location</u>	<u>Estimated Dates for Start &amp; Completion of Relocation or Adjustment</u>
NiCor 1844 Ferry Road Naperville, IL 60563 Attn: Hans Bell (630) 983-8676	4" gas main	Sta. 1004+79 21.05' RT	During Construction
	4" gas main	Sta. 1004+80 37.8' RT	During Construction
	4" gas main	Sta. 1008+25 19.5' RT	During Construction
	4" gas main	Sta. 1010+50.9 19.5' RT	During Construction
	4" gas main	Sta. 1017+46.26 30.27' RT	During Construction
	12" gas main	Sta. 1025+25 19.5' RT	During Construction
	4" gas main	Sta. 1026+40 17.44' RT	During Construction
	12" gas main	Sta. 1026+55 11.55' RT	During Construction

	2" gas lateral	Sta. 1027+38.50 15.5' LT	During Construction
	12" gas main	Sta. 1028+28.8 25.4' RT	During Construction
	4" gas main	Sta. 1037+19 19.5' RT	During Construction
	4" gas main	Sta. 1039+01 23.55' RT	During Construction
	2" gas lateral	Sta. 1039+75.6 13.14' LT	During Construction
	4" gas main	Sta. 1040+35.1 19.5' RT	During Construction
	4" gas main	Sta. 1044+35 19.5' RT	During Construction
	2" gas lateral	Sta. 1045+74.8 6.16' LT	During Construction
	4" gas main	Sta. 1052+76.2 40.0' RT	During Construction
	4" gas main	Sta. 1053+37.86 15.0' LT	During Construction
	2" gas lateral	Sta. 1061+53 16.0' LT & RT	During Construction
	2" gas main	Sta. 1063+25 19.5' LT	During Construction
	6" gas main	Sta. 1087+25 10' LT	During Construction
	12" gas main	Sta. 1085+45 19.5' RT	During Construction
	12" gas main	Sta. 1087+94 19.5' RT	During Construction

	12" gas main	Sta. 1089+54 19.5' RT	During Construction
	6" gas main	Sta. 1090+55 5' LT	During Construction
	6" gas lateral	Sta. 1090+60 6.95' LT	During Construction
	12" gas main	Sta. 1092+55 19.5' RT	During Construction
	6" gas lateral	Sta. 1094+06.61 4.52' LT	During Construction
	12" gas main	Sta. 1095+74 19.5' RT	During Construction
	6" gas lateral	Sta. 1096+40.47 4.02' LT	During Construction
	12" gas main	Sta. 1097+70 19.5' RT	During Construction
	2" gas main	Sta. 1098+05 5' LT	During Construction
	12" gas main	Sta. 1101+50 19.5' RT	During Construction
	4" gas main	Sta. 3051+50 5' RT	During Construction
Comcast Cable 688 Industrial Drive Elmhurst, IL 60126 Attn: Ted Wyman (630) 600-6349	Underground Conduit	Sta. 1022+84.24 6.0' LT	During Construction
	Underground Conduit	Sta. 1022+60.26 22.0' RT	During Construction
	Underground Conduit	Sta. 1062+49.00 15.0' LT	During Construction

	Underground Conduit	Sta. 1086+78.26 12.0' LT	During Construction
AT&T Illinois 2004 Miner Street Des Plaines, IL 60016 Attn: Brian Migliorese (847) 759-5581	Underground Conduit	Sta. 1022+68.14 6.0' LT	During Construction
	Underground Conduit	Sta. 1023+56.65 8.0' LT	During Construction
	Underground Conduit	Sta. 1038+91.73 17.0' LT	During Construction
	Underground Conduit	Sta. 1039+60.00 15.0' LT	During Construction
	Underground Conduit	Sta. 1053+06.30 15.0' LT	During Construction
	Underground Conduit	Sta. 1060+64.64 15.0' LT	During Construction
	Underground Conduit	Sta. 1094+05.50 4.5' LT	During Construction
ComEd Libertyville Business Office 1500 Franklin Boulevard Libertyville, IL 60048 Attn: Terri Bleck (847) 816-5239	5" Steel Pipe	Sta. 1022+62.19 6.0' LT	During Construction
	5" Steel Pipe	Sta. 1022+62.19 22.8' RT	During Construction
	2' x 2' Duct	Sta. 1053+09.00 15.0' LT	During Construction
	1' Duct	Sta. 1057+71.00 14.95' LT	During Construction
	1' x 2' Duct	Sta. 1060+99.00 15.0' LT	During Construction
	6" Pipe	Sta. 1094+57.89 4.34' LT	During Construction

	5" Pipe	Sta. 1095+29.60 4.95' LT	During Construction
Metropolitan Water Reclamation District 100 East Erie Street Chicago, IL 60611 Attn: Joe Rakoczy (312) 751-3250	4 Duct MSD Conduit	Sta. 1074+67.4 175' RT	During Construction

Sewer work may not begin until the MWRDGC Permit is issued.

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

**Traffic Control Plan**

Effective: September 30, 1985      Revised: January 1, 2007

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

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

The Contractor shall contact the Village of Wilmette and the City of Evanston at least 72 hours in advance of beginning work.

STANDARDS:      701501-03, 701502-01, 701701-04, 701801-03, 702001-06

DETAILS:      TC-10 – Traffic Control and Protection for Side Roads and Driveways  
 TC-11 – Typical Applications Raised Reflective Pavement Markers  
                   (Snow-Plow Resistant)  
 TC-13 – District One Typical Pavement Markings  
 TC-14 – Traffic Control and Protection at Turn Bays (To Remain Open to  
                   Traffic)  
 TC-16 – Pavement Marking Letters and Symbols for Traffic Staging



Detour Plan Construction Stage 1  
Detour Plan Construction Stage 2  
Suggested Construction Procedure and Maintenance of Traffic Typical  
Section and Notes  
Construction Schedule

SPECIAL PROVISIONS: Maintenance of Roadways  
Traffic Control Plan  
Traffic Control and Protection (Lump Sum Payment)  
Work Restrictions  
Construction Operations

RECURRING SPECIAL PROVISIONS: LRS 3 – Work Zone Traffic Control

**Construction Operations**

All work within the defined limits of the project shall be performed between the hours of 7:00 AM and 7:00 PM, Monday through Friday, and between 8:00 AM and 5:00 PM on Saturday, except in an emergency or when specific permission has been granted by the Village or City Engineer, as applicable by location. The Village and City must be notified at least 48 hours in advance if work is to be performed on Saturdays. No work is to be performed on Sunday or the holidays of New Year's Day, Memorial Day, 3<sup>rd</sup> and 4<sup>th</sup> of July, Labor Day, Thanksgiving or Christmas Day.

These time restrictions shall not apply to maintenance or operation of safety and traffic control devices such as barricades, signs, and lighting or to construction of an emergency nature.

**Protection of Existing Trees (Village of Wilmette)**

The Contractor shall be responsible for taking measures to minimize damage to tree limbs, tree trunks, and tree roots at each work site. All such measures shall be included in the contract price for other work except that payment will be made for, TEMPORARY FENCE, TREE ROOT PRUNING, TREE PRUNING (1 TO 10 INCH DIAMETER), and TREE PRUNING (OVER 10 INCH DIAMETER).

- A. Earth Saw Cut of Tree Roots (Root Pruning):
  - 1. Whenever proposed excavation falls within a drip-line of a tree, the Contractor shall:

- a. Root prune 6-inches behind and parallel to the proposed edge of trench a neat, clean vertical cut to a minimum depth directed by the Village through all affected tree roots.
  - b. Root prune to a maximum width of 4-inches using a "Vermeer" wheel, or other similar machine. Trenching machines will not be permitted.
  - c. Exercise care not to cut any existing utilities.
  - d. If during construction it becomes necessary to expose tree roots which have not been precut, **the Village of Wilmette shall be notified** and the Contractor shall provide a clean, vertical cut at the proper root location, nearer the tree trunk, as necessary, by means of hand-digging and trimming with chain saw or hand saw. Ripping, shredding, shearing, chopping or tearing will not be permitted.
2. Whenever curb and gutter is removed for replacement, or excavation for removal of or construction of a structure is within the drip line/root zone of a tree, the Contractor shall:
- a. Root prune 6-inches behind the curbing so as to neatly cut the tree roots.
  - b. Depth of cut shall be 12 inches for curb removal and replacement and 24 inches for structural work. Any roots encountered at a greater depth shall be neatly saw cut at no additional cost.
  - c. Locations where earth saw cutting of tree roots is required will be marked in the field by the Engineer.
3. All root pruning work is to be performed through the services of a licensed tree expert to be approved by the Engineer / Village.

Root pruning will be paid for at the contract unit price each for TREE ROOT PRUNING, which price shall be payment for all labor, materials and equipment.

B. Temporary Fence:

1. The Contractor shall erect a temporary fence around all trees within the construction area to establish a "tree protection zone" before any work begins or any material is delivered to the jobsite. No work is to be performed (other than root pruning), materials stored or vehicles driven or parked within the "tree protection zone".

2. The exact location and establishment of the "tree protection zone" fence shall be approved by the Engineer / Village prior to setting the fence.
3. The fence shall be erected on four sides of the tree at the drip-line of the tree or as determined by the Engineer / Village.
4. Construction area is defined as all areas within 20-feet each side of water or sewer main location.
5. All work within the "tree protection zone" shall have the Engineer's prior approval. All slopes and other areas not regraded should be avoided so that unnecessary damage is not done to the existing turf, tree root system or ground cover.
6. The grade within the "tree protection zone" shall not be changed unless approved by the Engineer prior to making said changes or performing the work.

The fence shall be similar to wood lath snow fence (48 inches high), plastic poly-type or any other type of highly visible barrier approved by the Engineer. This fence shall be properly maintained and shall remain up until final restoration, unless the Engineer directs removal otherwise. Tree fence shall be supported using five-foot high T-Post style fence posts. **Utilizing re-bar as a fence post will not be permitted.**

Temporary fence will be paid for at the contract unit price per foot for TEMPORARY FENCE, which price shall include furnishing, installing, maintaining, and removing.

C. Auguring/Saw Cutting Requirements:

<u>TREE DIAMETER (DBH)</u>	<u>AUGERING/ SAWCUTTING SPECIFICATION</u>
2 – 9 inch in diameter	Auger or saw cut 6-foot from face of tree in all directions if trench is located within this radius.
10 - 14 inch. in diameter	Auger or saw cut 10-feet from face of tree in all directions if trench is located within this radius.
15 - 19 inch. in diameter	Auger or saw cut 12-feet from face of tree in all directions if trench is located within this radius.
Over 19 inch in diameter	Saw cut 15-feet from face of tree in all

directions if trench is located within this radius.

DBH = Diameter Breast Height, measured at 4.5-ft. above ground.

These auguring specifications can be amended as needed by the Village or City Forester.

D. Tree Limb Pruning

1. The Contractor shall inspect the work site in advance and arrange with the Village of Wilmette (847 853-7660) to have any tree limbs pruned that might be damaged by equipment operations at least one week prior to the start of construction. Any tree limbs that are broken by construction equipment after the initial pruning must be reported to the Village within 24 hours. Any correction cuts that are necessary will be pruned by the Village at the Contractor's expense.

E. Removal of Driveway Pavement and Sidewalk:

1. In order to minimize the potential damage to the tree root system(s), the Contractor will not be allowed to operate any construction equipment or machinery within the "tree protection zone" located between the curb and the right-of-way property line.
2. Sidewalk to be removed in the areas adjacent to the "tree protection zones" shall be removed with equipment operated from the street pavement. Removal equipment shall be Gradall (or similar method), or by hand or a combination of these methods. The method of removal shall be approved by the Engineer prior to commencing any work.
3. Any pavement or pavement related work that is removed shall be immediately disposed of from the area and shall not be stockpiled or stored within the parkway area under any circumstances.

F. Backfilling and Mulching:

1. All backfill material within the turf area in back of the curb, which is not selected trench backfill material, shall be pulverized topsoil meeting the requirements of Article 1081.05 of the Standard Specifications. Excavated spoil material will not be permitted as an acceptable backfill material. Prior to placing the topsoil and/or sod, in areas outside the protection zone, the existing ground shall be disked to a depth no greater than one inch (1"), unless otherwise directed by the Engineer. No grading will be allowed within the drip-line of any tree unless directed by the Engineer.

2. The Contractor shall provide shredded tree bark mulch meeting the requirements of Article 1081.06 of the Standard Specifications around all trees meeting the requirements stated below. The area of mulching will depend on the size, location and adjacent grades, but shall be a minimum of three inches (3") deep. In no cases will the limits of the mulch material be less than the area of existing mulch and/or less than 24" from the face of the tree unless otherwise directed by the Engineer. Include trees that have existing mulch and those six inches (6") or less in diameter. Tree mulching for this type of work will not be paid for separately but shall be incidental to the project.

G. Damages:

1. In the event that a tree not scheduled for removal is injured such that potential irreparable damage may ensue, as determined by the Village, the Contractor shall be held liable in the amount of \$100 per inch diameter of the tree. The Contractor shall cause to be paid to the Village either by direct payment to the Village or a deduction from the contract the full amount determined by the formula.
2. The Contractor may be required to remove the damaged tree and replace it on a three to one (3:1) basis, at his own expense. The Village will select replacement trees.
3. The Contractor shall place extreme importance upon the protection and care of trees and shrubs which are to remain during all times of this improvement. It is of paramount importance to the Village that the trees and shrubs which are to remain are adequately protected by the Contractor and made safe from harm and potential damage from the operations and construction of this improvement. If the Contractor is found to be in violation of storage or operations within the "tree protection zone" or construction activities not approved by the Engineer, a penalty shall be levied against the Contractor with the monies being deducted from the contract. The amount of the penalty shall be two hundred fifty dollars (\$250.00) per occurrence per day.

**Protection of Existing Trees (City of Evanston)**

Prospective contractors are advised that it is the express intent of the City of Evanston to minimize trimming of trees in the work corridors and to vigorously protect the quality of the urban forest. The equipment and methods used to perform any and all portions of the work must be the size and nature that results in the least disruption to the existing environment. The City of Evanston reserves the right to limit the size of the equipment used on the project.

The contractor shall at all times demonstrate to the satisfaction of the City of Evanston that suitable precautions and due diligence are being observed to protect the natural and improved

features of the area. Special and continuing attention will be paid to the maintenance of tree protection fencing and the appropriate observance of tree protection areas as delineated by the fencing.

To insure compliance with the City of Evanston's intent to minimize area disturbances, the following procedures and actions will be followed: When the Engineer determines that a deficiency exists, the Contractor shall be notified. If the contractor fails to rectify the deficiency immediately, the Engineer will impose a daily monetary deduction for each 24-hour period (or portion thereof) the deficiency exists. This time period will begin with the time of notification to the Contractor and end with the Engineer's acceptance of the corrections. The cost of the daily deduction will be \$250 per occurrence per calendar day. In addition, the Contractor will be liable and responsible for any and all corrective and remedial actions required to restore the area or item to comparable pre-project conditions as well as any additional fines and fees as stated in the tree protection requirements in these specifications.

**Care of Existing Plant Material.** If construction is to occur within the root zone of existing plant material, root pruning and special plant care will be required, as hereinafter specified. All pruning shall be performed by a professional arborist (someone whose principal occupation is the care and maintenance of trees).

The Contractor shall be responsible for taking measures to minimize damage to tree limbs, tree trunks, and tree roots at each work site. All such measures shall be included in the contract price for other work except that payment will be made for, TEMPORARY FENCE, TREE ROOT PRUNING, TREE PRUNING (1 TO 10 INCH DIAMETER), and TREE PRUNING (OVER 10 INCH DIAMETER).

- A. Earth Saw Cut of Tree Roots (Root Pruning):
  - 1. Whenever the proposed excavation falls within the drip-line of a tree, the contractor shall:
    - a. Root prune 6-inches behind and parallel to the proposed edge of trench a neat, clean vertical cut to a minimum depth directed by the City Arborist through all the affected tree roots.
    - b. Root prune to a maximum width of 4 inches using a "Vermeer" wheel matching the following criteria. The root pruner wheel shall be 60" diameter (188" circumference) carrying 28 pair (56 total) stump cutter teeth with tooth spacing at 6.7" on center. The cutting depth shall be 24" and shall utilize a 65hp tractor. Trenching machines will not be permitted.
    - c. Exercise care not to cut any existing utilities.

- d. If during construction it becomes evident that additional tree roots will require root pruning, the City Arborist and the Contractor shall have the root pruning sub-contractor return to the site to properly root prune the tree at the location directed by the City Arborist. The contractor will be paid for the additional root pruning as described below; however, no additional compensation will be made for remobilization to the construction site.
  - e. For locations where root pruning is performed for the purpose of curb and gutter removal and replacement, the contractor shall root prune 6-inches behind the curbing so as to neatly cut the tree roots.
  - f. Depth of cut shall be 12 inches for curb removal and replacement and 24 inches for structural work. Any roots encountered at a greater depth shall be neatly saw-cut at no additional cost.
  - g. The Engineer or City Arborist will mark locations where earth saw cutting of tree roots is required in the field.
2. All root pruning cuts shall be immediately backfilled with material side cast from the earth-sawing procedure, so that the ground surface is even and no tripping potential exists.
  3. All root pruning work is to be performed through the services of a certified arborist to be approved by the City Arborist.

Root pruning will be paid for at the contract unit price each for TREE ROOT PRUNING, which price shall be payment for all labor, materials and equipment.

**B. Temporary Fence:**

1. The Contractor shall erect a temporary fence around all trees within the construction area to establish a "tree protection zone" (see attached diagram) before any work begins or any material is delivered to the jobsite. No work is to be performed (other than root pruning), materials stored, or vehicles driven or parked within the "tree protection zone" at any time during the course of construction.
2. The exact location and establishment of the "tree protection zone" fence shall be approved by the City Arborist prior to setting the fence. The fence shall be 48 inches high, plastic poly-type or any other type of highly visible barrier in an open-weave type pattern with large openings. The type, color and pattern of the fence shall be approved by the Engineer prior to erection. This fence shall be properly maintained in an

upright manner and shall remain up until final restoration, unless the Engineer directs removal otherwise. Tree fence shall be supported using T-Post style fence posts with a maximum of 8' spacing. T-posts must be at least six feet in length, two feet of which must be set in the ground. The fence shall be attached to posts and secured with a minimum of three nylon locking ties per post. **Utilizing re-bar as a fence post will not be permitted.**

3. The fence shall be installed 18" behind and parallel to the curb and between the curb and sidewalk. Fence shall be erected on a minimum of three sides with the fourth sidewalk side being optional. Fence shall be installed at the drip-line of the tree or as listed in the following guidelines:
  - a. Establish the diameter of the tree at a point four and a half feet above the ground, (referred to as diameter breast height or DBH).
    - i. Trees with diameters 10 inches and under require root zone protection a minimum of five feet from the center of the tree.
    - ii. Trees 10 to 19 inches in diameter shall have a minimum root zone protection of 10 feet from the center of the tree.
    - iii. Trees greater than 19 inches in diameter shall have a minimum root zone protection of 15 feet from the center of the tree.
4. Parking or maneuvering of machinery, stockpiling of materials or any other use will not be allowed upon unpaved areas within 3 m (10 ft.) of the root protection zone of trees or plants designated to be protected.
5. Construction area is defined as all areas within 20 feet each side of water or sewer main location.
6. All work within the "tree protection zone" shall have the Engineer's prior approval. All slopes and other areas not re-graded should be avoided so that unnecessary damage is not done to the existing turf, tree root system or ground cover.
7. The grade within the "tree protection zone" shall not be changed unless approved by the Engineer prior to making said changes or performing the work.

Temporary fence will be paid for at the contract unit price per foot for TEMPORARY FENCE, which price shall include furnishing, installing, maintaining, and removing.



Within the City of Evanston, when sewer or water improvements are required within the "root protection zone", Tree Trunk Protection will be required. The contractor shall provide 50 mm by 200 mm by 2.4 m (2 in. by 8 in. by 8 ft.) boards banded continuously around each trunk to prevent scarring of trees shown on the plans or designated by the Engineer. For multi-stem trees, saplings, and shrubs to be protected within the area of construction, temporary fencing may be used for trunk protection. The work associated with the Tree Trunk Protection will not be paid for separately and will be considered incidental to the cost of Temporary Fence.

**Tree Pruning.** Tree pruning shall consist of pruning branches, for aesthetic and structural enhancement, of existing trees as shown on the plans or as directed by the Engineer. The National Arborist Association's Pruning Standards for Shade Trees Class II – Standard Pruning specifications shall be followed. All branch pruning to American Elms and Oak trees shall be done between October 15 and April 15, when the trees are dormant.

Underpruning to provide clearance over the street will be allowed up to 14 feet above the pavement. If additional clearance is needed, a request in writing shall be submitted to the City Arborist.

#### C. Tree Limb Pruning

1. The Contractor shall inspect the work site in advance and arrange with the Evanston Parks/Forestry Division (847 866-2912) to have any tree limbs pruned that might be damaged by equipment operations at least one week prior to the start of construction. Any tree limbs that are broken by construction equipment after the initial pruning must be reported to the Village within 24 hours. Any correction cuts that are necessary will be pruned by the Village at the Contractor's expense.
2. Tree pruning shall consist of pruning branches, for aesthetic and structural enhancement, of existing trees as shown on the plans or as directed by the Engineer. The National Arborist Association's Pruning Standards for Shade Trees Class II – Standard Pruning specifications shall be followed. All branch pruning to American Elms and Oak trees shall be done between October 15 and April 15, when the trees are dormant.
3. Underpruning to provide clearance over the street will be allowed up to 14 feet above the pavement. If additional clearance is needed, a request in writing shall be submitted to the City Arborist.

#### D. Damages

1. In the event that a tree not scheduled for removal is injured such that potential irreparable damage may ensue, as determined by the City, the Contractor shall be held liable in the amount of \$100 per inch diameter of the tree. The Contractor shall cause to be paid to the City either by direct payment to the City or a deduction from the contract the full amount determined by the formula.
2. The contractor may be required to remove the damaged tree and replace it on a three to one (3:1) basis, at his own expense. The City will select replacement trees
3. The Contractor shall place extreme importance upon the protection and care of trees and shrubs which are to remain during all times of this improvement. It is of paramount importance to the City that the trees and shrubs which are to remain are adequately protected by the Contractor and made safe from harm and potential damage from the operations and construction of this improvement. If the Contractor is found to be in violation of storage or operations within the "tree protection zone" or construction activities not approved by the Engineer, a penalty shall be levied against the Contractor with the monies being deducted from the contract. The amount of the penalty shall be two hundred fifty dollars (\$250.00) per occurrence per day.

**Porous Granular Embankment, Subgrade**

Effective: September 30, 1985

Revised: January 1, 2007

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

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

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

2. Gravel, Crushed Gravel and Pit Run Gravel

<u>Sieve Size</u>	<u>Percent Passing</u>
* 6 in. (150 mm)	97±3

* 4 in. (100 mm)	90±10
2 in. (50 mm)	55±25
No. 4 (4.75 mm)	30±20
No. 200 (75 µm)	5±5

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

The porous granular material shall be placed in one lift when the total thickness to be placed is 2 feet (600 mm) or less or as directed by the Engineer. Each lift of the porous granular material shall be rolled with a vibratory roller meeting the requirements of Article 1101.01(g) to obtain the desired keying or interlock and compaction. The Engineer shall verify that adequate keying has been obtained.

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

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

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

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

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

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

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

Description: This work shall consist of cleaning sediment from each assembled inlet filter. The Engineer will designate the need for cleaning based on the rate of debris and silt collected at each inlet filter location.

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

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

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

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

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

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

“(f) Silt Fence.....Article 1080.02”

1080.02 Geotextile Fabric. Add the following to Article 1080.02:

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

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

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

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

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

The silt fence shall be supported on hardwood posts spaced on a maximum of 8 ft (2.4 m) centers. The bottom of the fabric shall be installed in a backfilled and compacted trench a minimum of 6 in (150 mm) deep and securely attached to the hardwood post by a method approved by the Engineer. The minimum height above ground for all silt fence shall be 30 in (760 mm).”

280.05 Maintenance. Add the following to Article 280.05:

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

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

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

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

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

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

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

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

**Trench Backfill, Special**

This work shall consist of furnishing and transporting aggregate for use as backfilling material for all trenches made in the subgrade of the proposed improvement, and all trenches outside of the subgrade where the inner edge of the trench is closer than two feet to the edge of the

proposed pavement, stabilized shoulder, curb or sidewalk. This work shall be done in accordance with Section 208 of the Standard Specifications, except as modified herein.

Material used for trench backfill shall be of CA-11 or CA-13 gradation to a depth of 1-foot above the crown of the pipe and CA-6 gradation for the remainder of the trench, and shall meet the requirements of Article 1004.05 of the Standard Specifications except crushed concrete and slag will not be allowed. The trench backfill shall be compacted in accordance with Method 1 or Method 3 described in Article 550.07 of the Standard Specifications. Method 2 (ponding) will not be allowed.

Trench Backfill shall be measured in accordance with Article 208.03 of the Standard Specifications. This work will be paid for at the Contract unit price per cubic yard for TRENCH BACKFILL, SPECIAL.

#### **Exploration Trench**

This work shall be done in accordance with Section 213 of the Standard Specifications except that all occurrences of "farm underdrains" shall be replaced with "utilities".

This item shall consist of constructing a trench for the purpose of locating existing utilities. The exploration trench shall be constructed as directed by the engineer.

The trench shall be not less than 72 inches in depth, measured from the existing ground elevation. The width of the trench shall be sufficient to allow proper investigation of the entire trench.

When an existing sewer or service is encountered, another trench shall be excavated on the opposite side of the proposed improvement to establish the line and grade of the existing sewer or service. Broken tile shall be repaired immediately and no surface runoff shall be allowed to enter any tile.

After the trench has been inspected by the engineer, the excavated material shall be used to backfill the trench in a manner satisfactory to the engineer. Any excess material shall be disposed of according to Article 202.03, and the area shall be shaped and trimmed according to Section 212.

When approved by the engineer, the contractor may use other means of locating existing sewers or services.

The exploration trench will be measured for payment in feet of actual trench constructed.

This work will be paid at the contract unit price per foot for EXPLORATION TRENCH, of the depth specified.

**Combined Sewer Removal**

**Sanitary Sewer Removal**

This work shall consist of the removal of portions of the existing sewer and end plugging of the portions that are to remain in place or portions plugged inside manholes, catch basins, or inlets. This work shall be performed at locations shown on the plans and/or subject to the review of the engineer in accordance with Section 551 of the Standard Specifications, except as specified herein.

Sewer plugs shall be 2' long (minimum) concrete or grout plug. The plug shall prevent ground water from entering the existing sewer and through drainage. The cost of any existing sewer which shall be abandoned and plugged shall be incidental to the pay item for COMBINED SEWER REMOVAL and SANITARY SEWER REMOVAL.

Excavation required for existing sewer removal shall be performed in accordance with the applicable portion of the "WATER AND SEWER SPECIFICATIONS" and Section 605 of the Standard Specifications. Existing sewer removal shall end either at a joint or at a location where the existing pipe has been saw cut so as to provide a smooth, even surface so as to allow a watertight joint. Additional removal required by non-compliance with this Special Provision will be performed at the contractor's expense and no additional compensation will be allowed. The existing sewer shall be plugged at all locations where removal is specified and sewer is to be abandoned.

If the excavation required for the removal operation falls within a paved area (existing), it shall be backfilled with trench backfill. This work shall be performed in accordance with the applicable requirements of the Special Provision "TRENCH BACKFILL, SPECIAL" included herein. Trench Backfill, Special, will not be measured for payment but shall be considered incidental to the contract unit price per lineal foot for combined sewer removal.

This work will be paid for at the contract unit price per lineal foot for COMBINED SEWER REMOVAL or SANITARY SEWER REMOVAL, of the diameter specified, measured as removed. This price shall include labor, excavation, materials, plugging of existing sewer to remain in place, and backfill as herein specified.

**Sanitary Manholes to be Removed**

This work shall consist of removing sanitary manholes at locations shown on the plans and/or subject to the review of the engineer in accordance with Section 605 of the Standard Specifications.

This work shall be paid for at the contract unit price per each for SANITARY MANHOLES TO BE REMOVED.

## Water Main

### A. General

All work shall conform with the Standard Specifications for Water and Sewer Main Construction in Illinois, Latest Edition; Illinois Environmental Protection Agency; American Water Works Association Specifications; American Standards National Institute Specifications; and applicable Village special provisions.

### B. Water Main Pipe and Fittings

All water mains shall be ductile iron pipe (Class 54 for 12" pipes, Class 52 for all other pipes), American made meeting the requirements of ANSI / AWWA C151 / A21.51, with ANSI / AWWA C104 / A21.4 cement lining, and with push-on single gasket joints or mechanical joints conforming to ANSI/AWWA C111/A21.11.

Fittings shall be ductile iron with 250 psi pressure rating, cement lined in accordance with ANSI/AWWA C110/A21.10. "Mega-Lug" retainer glands shall be required at all connections of water main with bends, tees, crosses, reducers and other fittings.

Ductile iron pipe and fittings shall be encased with eight (8) mil thick polyethylene encasement conforming to ANSI/AWWA C105/A21.5. Encasement will not be measured and paid for separately, but shall be included in the cost for Water Main.

Water mains shall be constructed with a minimum depth of cover of 5'-6" from the existing ground or proposed grade (whichever is lower) to the top of barrel of the pipe.

All fittings including bends, tees, elbows, crosses, reducers, retainer glands, cutting in sleeves, plugs, anchor fittings, thrust block, and other appurtenances shall be American made and will not be paid for separately but shall be included in the contract unit price per lineal foot of respective size water main. Any deviation from the plans caused by field conditions will not be paid for separately, but shall be considered incidental to water main of the size specified.

### C. Water Main Protection Requirements

#### 1. Horizontal Separation

Whenever possible, a water main must be laid at least ten (10) feet horizontally from any existing or proposed drain or sewer line. Should local conditions exist which would prevent a lateral separation of ten (10) feet, a water main may be laid closer than ten (10) feet to a storm or sanitary sewer provided that the water main invert is at eighteen (18) inches above the crown of the sewer, and is higher in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above, both the water main and sewer must be constructed of ductile iron pipe, meeting requirements of Section 40-2.02 of the Standard Specifications for Water and Sewer Main Construction in Illinois" and meeting



water main standards and be pressure tested to the maximum expected surcharge head to assure water tightness before backfilling.

2. Vertical Separation

Whenever water main must cross house sewers, storm sewers, or sanitary sewers, the water main shall be laid at such an elevation that the invert of the water main is eighteen (18) inches above the crown of the drain or sewer. This vertical separation must be maintained for that portion of the water main located with ten (10) feet horizontally of any sewer or drain crossed. This must be measured as the normal distance from the water main to the drain or sewer. If it is impossible to obtain the proper vertical separation as described above, or if it is necessary for the water main to pass under a sewer or drain, both the water main and sewer must be constructed of ductile iron pipe, meeting requirements of Section 40-2.02 of the Standard Specifications for Water and Sewer Main Construction in Illinois" and meeting water main standards. This construction must extend on each side of the crossing until the normal distance from the water main to the sewer or drain line is at least ten (10) feet. In making such crossings, center a length of water main pipe over the sewer to be crossed so that the joints will be equidistant from the sewer. Where a water main must cross under a sewer, a vertical separation of (18) inches between the invert of the sewer and the crown of the water main shall be maintained, along with means to support the larger sized lines to prevent their settling and breaking the water main.

D. Trench Backfill and Bedding

Trench Backfill requirements for water main shall be in accordance with the Contract Special Provision for TRENCH BACKFILL, SPECIAL. This work shall be paid for at the contract unit price per cubic yard for TRENCH BACKFILL, SPECIAL.

The bedding material for the pipe shall be CA-11 or CA-13 coarse aggregate, and shall be placed from 4" below the pipe to the spring line of the proposed water main. The cost for the bedding shall be incidental to the contract unit price per foot for the WATER MAIN of the size specified.

E. Thrust Blocking

Precast concrete thrust blocks shall be constructed at all bends, tees, fire hydrants, plugs and valves against undisturbed earth and in accordance with the plan details and Section 41-2.09 of the Standard Specifications for Water and Sewer Main Construction in Illinois. Poured concrete thrust blocks will not be allowed. This work will not be measured or paid for separately but shall be included in the cost for the water main and no additional compensation will be allowed. See attached City of Evanston detail for Thrust Blocks.

F. Non-Pressure Connections

The contractor shall make connections to the existing water main by removing a portion of the existing main and connecting the proposed water main at that point, as shown on the plans. This work shall include all necessary fittings, retainer glands, labor and equipment required to complete the work. Connection of ductile iron water main to existing cast iron water main will require the use of a Tyler Long Pattern Duo Solid Sleeve. The use of 441 Transition Couplings will not be allowed.

After pressure testing, chlorination, and all service transfers have been completed, then existing main shall be shut down and the connections shall then be completed.

G. Pressure Testing

All water mains or any valved section of a water main shall be partially backfilled so that all joints are exposed. It shall be subjected to a hydrostatic pressure of 150 psi gauged, based on the elevation of the lowest point in the line or section under test and corrected to the elevation of the test gauge for both pressure and leakage for a period of not less than one (1) hour. Any cracked or defective pipe fittings, valves, hydrants found shall be removed and replaced with satisfactory materials and the test repeated until test results are satisfactory to the Village. Joints showing visible leaks shall be tightened and made water tight. Pressure tests shall be witnessed by the Director of Public Works or his authorized representative. Allowable leakage shall not exceed a ten (10) pound loss for one (1) hour and maintain the pressure thereafter or according to the following Table:

Leakage Requirements

<u>Main Size</u>	<u>Allowable Leakage</u>
12"	1.80 / gallons / hr. 1000' of main
10"	1.50    "    "    "    "
8"	1.20    "    "    "    "
6"	0.90    "    "    "    "
4"	0.60    "    "    "    "

Allowable leakage for main sizes greater than twelve (12) inches shall be determined by the Director of Public Works or his authorized representative.

H. Chlorination

The water main or any valve section shall be chlorinated only after the results of the hydrostatic test are satisfactory to the Director of Public Works or his authorized representative and the valved section has been flushed. The liquid chlorine gas mixture method of procedure, as stated hereinafter shall be followed:

1. Prior to chlorination, all dirt and foreign material shall be removed from the main, or any valved section, by a thorough flushing through the hydrants at a minimum of 2.5 feet per second.
2. A chlorine gas-water mixture shall be applied by means of a solution-feed chlorinating device, or if approved by the Director of Public Works or his authorized representative, the gas shall be fed directly from a chlorine cylinder equipped for diffusion of the gas within the pipe. All taps for chlorine injection shall be provided for in the valve vault.
3. The preferable point of application of the chlorinating agent shall be through a corporation stop inserted near the horizontal axis of the pipe at the beginning of the pipe line extension of any valve section to be placed in service. The water injector for delivering the gas-water mixture into the pipe shall be supplied by a tap on the pressure side of a valve controlling the flow into the pipe to be chlorinated.
4. Water from the pressure side of the valve or other source of supply shall be controlled to flow very slowly into the newly laid pipe line during the application of chlorine. The rate of chlorine gas-water mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall have a chlorine residual of not less than 100 ppm. It shall be left in contact with the main for at least twenty-four (24) hours with a 50 ppm chlorine residual remaining after the contact period.
5. Following the chlorination, all treated water shall be thoroughly flushed from the new section of main. Samples shall be collected for bacteriological analysis on two (2) successive days from various points on the new portion of the system under the supervision of the Water Department Superintendent or his authorized representative. The samples will be tested for potability in a laboratory approved by the State of Illinois. A report will be furnished to the Village, indicating negative bacteriological samples. The samples shall be taken at approximate twenty-four (24) hour intervals.

I. Final Inspection

The Contractor shall contact the Public Works Department of the Village of Wilmette, when all water main extensions are completed and installed, in conformance with the specifications, to set up a final inspection for Village acceptance.

J. Basis of Payment

This work will be paid for at the contract unit price per foot for WATER MAIN, of the diameter specified, which price shall include excavation, pipe bedding material, pipe fittings, retainer glands, joint materials, thrust blocks, polyethylene encasement,

hydrostatic testing, chlorination, non-pressure connections and all labor, materials and equipment necessary to complete the work shown on the plans and specified herein.

**Water Valves**

This work shall consist of furnishing and installing a water valve in vault at the locations specified in the plans.

Gate valves shall, in design, material and workmanship, conform to the standards of the latest AWWA C500 and AWWA C509. All materials used in the manufacture of waterworks gate valves shall conform to the AWWA standards designed for each material listed.

Water valves shall have replaceable resilient seats or wedges, and shall be manufactured by "Waterous", "American Flow Control", or approved equal. They shall be installed in concrete valve vaults in conformance with the details shown on the plans and at locations shown on the plans. Valves shall be installed using stainless steel bolts. A 1" cord will be installed on each side of each new valve in the vault to facilitate chlorination, flushing, and pressure testing.

This work will be paid for at the contract unit price each for WATER VALVES, of the size specified. This price shall include the cost of all labor, materials and equipment necessary to install the gate valve in a valve vault, including polyethylene wrapping, as detailed in the plans and to the satisfaction of the engineer. The cost to furnish and install the valve vault will be paid for separately as VALVE VAULTS.

**Fire Hydrants to be Adjusted**

This item consists of vertically adjusting of fire hydrants where called for on the plans or as directed by the Engineer. The fire hydrants with the auxiliary valves shall be adjusted vertically to meet the proposed final grade.

Any fire hydrant damaged by the Contractor shall be repaired at his/her own expense.

The work shall be performed according to Section 564 of the Standard Specifications, and in a manner approved, written or orally, by the Engineer of the municipality or water district having jurisdiction over the fire hydrant. The adjustment shall be done by removing the existing 6-inch extension and installing a 1-foot extension. The removed 6-inch extension shall become the property of the Village of Wilmette or the City of Evanston.

Basis of Payment: This work shall be paid for at the contract unit price each for FIRE HYDRANTS TO BE ADJUSTED, which price shall include all labor, materials, and equipment to complete the work in accordance with the plans and the Special Provisions.

**Fire Hydrant to be Removed**

This work shall consist of removal and stockpiling of fire hydrants and fire hydrants with auxiliary valves.

The hole formed by the removal of these items shall be backfilled with fine aggregate.

All fire hydrants including those with auxiliary valves shall remain the property of the City of Evanston and be stored on site for the City forces to pick up. The Contractor shall make arrangements with the City of Evanston concerning the pick up prior to removal.

This work will be paid for at the contract unit price each for FIRE HYDRANT TO BE REMOVED, which price shall include all excavation; backfilling including fine aggregate and disposal of surplus materials. The removal of auxiliary valves will not be paid for separately but shall be included in the cost of FIRE HYDRANT TO BE REMOVED.

**Fire Hydrants with Auxiliary Valve and Valve Box**

CITY OF EVANSTON:

This work shall consist of furnishing and installing new hydrants at the locations within the City of Evanston as shown on the plans.

Hydrants shall be Waterous Pacer #WB67-250 with two (2) -2 ½ inch hose connections and one (1)-4 inch pumper nozzle. Hydrants shall have a 5 inch hydrant valve opening. Hydrants shall have breakaway flanges, National Standard Threads, with "Mega-Lug" joint restraints. Hydrants shall be factory tested by means of a hydrostatic test of 2 kPA (300 psi) with hydrant valve in a closed position, and again with the hydrant valve in an open position.

Trench depth for connection to the hydrant shall be 1.5 meters to 1.8 meters (5 to 6 feet) to the bottom.

Each hydrant shall be set vertical on a flat stone or concrete block of at least 2 sq. feet in area and of sufficient thickness to support the hydrant. The hydrants shall be installed so that the bottom of the steamer connection is not less than 15" or more than 24" above grade. An excavation shall be made around the bottom of the hydrant and the Contractor shall place in this place a minimum of 1 cu. yd. of crushed stone or coarse gravel. The hydrants shall be thrust blocked as specified herein.

The auxiliary valve shall be "Waterous" or "American Flow Control", six (6) inch diameter with replaceable resilient seats or wedges and attached directly to the hydrant. A cast iron valve box shall be installed over the valve with lid that is marked "WATER".

A six (6) inch diameter ductile iron pipe shall be furnished and installed between the hydrant auxiliary valve and the mainline water main. The pipe length will vary depending on the hydrant location.

The materials required for a complete installation of the auxiliary valve, valve box and the hydrant, including parts necessary to meet vertical grade separation requirements, shall be furnished and installed by the Contractor and included in the cost of FIRE HYDRANTS WITH AUXILIARY VALVE AND VALVE BOX. The valve box shall be Valve Box Adaptor II from Adaptor, Incorporated, or an approved equal. See attached City of Evanston Detail for Valve Boxes.

This work shall be paid for at the contract unit price each for FIRE HYDRANTS WITH AUXILIARY VALVE AND VALVE BOX to include all costs of installation, labor and materials required to complete the work shown on the plans, details, and specified herein.

The cost to furnish and install the six (6) inch diameter ductile iron pipe between the hydrant auxiliary valve and the main line water main shall be paid for separately as WATER MAIN 6".

#### VILLAGE OF WILMETTE:

This work shall consist of furnishing and installing new hydrants at the locations within the Village of Wilmette as shown on the plans.

Hydrants shall be "Clow" Eddy F2640 with two (2) -2 ½ inch hose connections and one (1)-4 ½ inch pumper nozzle. Hydrants shall have a 5 ¼ inch hydrant valve opening. Hydrants shall have breakaway safety flanges, caps and chains, a drain valve, a 6" inlet, corrosion resistant bolts, and painted high visibility RED.

Hydrants shall be factory tested by means of a hydrostatic test of 175 psi with hydrant valve in a closed position, and again with the hydrant valve in an open position.

Trench depth for connection to the hydrant shall be 5 to 6 feet to the bottom.

Each hydrant shall be set vertical on a precast concrete slab of sufficient thickness to support the hydrant. An excavation shall be made around the bottom of the hydrant and the Contractor shall place in this place a minimum of 3/8 cu. yd. of crushed stone or coarse gravel. The hydrants shall be thrust blocked as specified herein.

The auxiliary valve shall be "Waterous" or "American Flow Control", six (6) inch diameter with replaceable resilient seats or wedges and attached directly to the hydrant. A cast iron valve box shall be installed over the valve with lid that is marked "WATER".

A six (6) inch diameter ductile iron pipe shall be furnished and installed between the hydrant auxiliary valve and the mainline water main. The pipe length will vary depending on the hydrant location.

The materials required for a complete installation of the auxiliary valve, valve box, and the hydrant, including parts necessary to meet vertical grade separation requirements, shall be furnished and installed by the Contractor and included in the cost of FIRE HYDRANTS WITH AUXILIARY VALVE AND VALVE BOX.

This work shall be paid for at the contract unit price each for FIRE HYDRANTS WITH AUXILIARY VALVE AND VALVE BOX to include all costs of installation, labor and materials required to complete the work shown on the plans, details, and specified herein.

The cost to furnish and install the six (6) inch diameter ductile iron pipe between the hydrant auxiliary valve and the main line water main shall be paid for separately as WATER MAIN 6”.

#### **Valve Vaults**

This work shall conform to the requirements of Section 602 of the Standard Specifications and IDOT Standard Drawing 602501.

Valve Vaults shall be constructed of precast concrete sections conforming to the details shown in the plans. Frames and lids shall be IDOT Type 1 Frame, Closed Lid and the cover shall bear the marking “WATER”.

See attached City of Evanston details for Valve Vaults and Frames and Lids.

This work shall be measured and paid for at the contract unit price per each for VALVE VAULTS of the diameter and with the frame and lid indicated, which payment will be full compensation for constructing this item including all excavation, materials, labor, tools, equipment and incidentals necessary, including the valve vault and frame and lid.

#### **Valve Vaults to be Removed**

This work shall consist of the removal or the partial removal below grade and the disposal of a valve vault including valves in accordance with Section 605 of the Standard Specifications and as directed by the Engineer.

If the outlet and inlet pipes are not being removed but are to be abandoned, then this work shall also include sealing the pipe ends. Filling the hole left by the removal of the valve vault with an approved trench backfill material is included as part of this work.

This work will be paid for at the contact unit price per each for VALVE VAULTS TO BE REMOVED.

## **Valve Vaults to be Lined**

### **General**

This work shall consist all of labor, material and equipment required for rehabilitation of valve vaults from ground surface to sewer invert. The work to be performed shall include rehabilitation of all manholes under the contract as shown on the plans and specified herein.

### **Description**

The rehabilitation of manholes shall be performed to the lines, grades and dimensions as shown on the plans. Included in this work are:

- Cleaning of structure prior to rehabilitation
- Cleaning and surface preparation of existing concrete and brickwork
- Removal and replacement of existing manhole frames and covers at locations indicated on the plans.
- Removal and replacement of manhole steps (as required).

And all other incidental work necessary for the rehabilitation of the manholes as specified herein, and as shown on the Plans.

### **Contractor Qualifications**

The Contractor must meet the qualification requirement below:

- Applicators of structural lining systems must be certified by the Manufacturer in handling, mixing and applying the Manufacturer's product. By certified, the manufacturer must certify that 1) the manufacturer has properly trained and / or observed the applicator's applications of the manufacturer's project specifically being used on the project and is satisfied that the applicator is capable of completing successful applications, 2) the manufacturer has inspected the applicator's equipment to confirm it is the proper equipment for applying the specific material to be used on the project and will apply at the proper rate, mixture, etc. and 3) the manufacturer has confirmed that the applicator has the properly trained and experienced personnel specifically with the product to be applied on this project, including at least the foreman/forewoman and nozzle man/woman.

### **Materials**

The Material shall meet the qualification requirement below:

- Concrete and Cement Stabilized Sand: All concrete must conform to Class SI.
- Rapid Setting Liquid Accelerator: Liquid accelerator shall be Anit-Hydro as manufactured by Anti-Hydro Co., 269 Badger Avenue, Newark, NJ; Ipanex-R as manufactured by IPA Systems, Inc. 2745 N. Amber Street, Philadelphia, PA; or Engineer approved equal.



- Mortar: Mortar must be composed of one part Portland Cement, one part masonry cement (or ¼ part hydrated lime), and masonry sand equal to 2 ½ to 3 times the sum of the volumes of the cements and lime used. The sand must meet the requirements for “fine aggregate” per the IDOT state specifications.
- Grout: Unless otherwise specified, all grouting must be done with non-shrinking grout. Grouting of the manholes may include ring and seal areas, cone section, wall, pipe seals and penetrations, and/or bench and trough areas. Other areas of the manhole to be grouted shall be designated by the Engineer.
- Non-shrinking Grout: Non-shrinking grout must be furnished factory premixed so only water is added at the job site. Grout must be mixed in a mechanical mixer. No more water shall be used than is necessary to produce a flowable grout. All proportioning and mixing of the components must be in accordance with manufactures recommendations.
- Infiltration Control Products:
  1. Patching material: A quick setting, corrosion-resistant, cementitious material must be used as a patching material and must be mixed and applied according to the manufacturer’s recommendations and must have the following minimum requirements:
    - a. Compressive Strength ASTM C109 1400psi, 6 hours
    - b. Bond Strength ASTM C592 Minimum 145 psi
    - c. Cement ASTM C150 Sulfide resistant
    - d. Applied Density 105 pcf (±5 pcf)
    - e. Shrinkage ASTM C596 0% and 90% R.H.Product must be Strong-Seal QSR as manufactured and/or supplied by Strong-Seal, or Engineer approved equal.
- Manhole walls and bench coating materials
  1. Structural / Moderate Sulfide Resistant Coating for Rehabilitation: Strong-Seal Systems High Performance, as manufactured by Strong Seal Systems, Pine Bluff, AR; Quadex Aluminaliner as manufactured by LaFarge Calcium Aluminates, Chesapeake, VA or Engineer approved equal: 1” minimum thickness. All bids must be based on and the contractor must provide a 1” minimum thickness for these products.
  2. Non-structural / High Sulfide resistant coating for rehabilitation: Rave 405 High Build Epoxy Lining System, 100 mil. Minimum thickness, to be applied in two coats as manufactured by Raven Chemicals, Tulsa, OK: Spraywall Process, 100 mil. Thickness, to be applied in two coats as manufactured by Sprayroq, Birmingham, AL, or Engineer approved equal.

#### Lining Design

The liner shall be designed to withstand the hydraulic load generated by ground water. The ground water table shall be assumed to extend to ground surface. Any material selected for the liner shall be able to withstand corrosive environment created by hydrogen sulfide. The lining thickness shall be uniform for the entire depth of the manhole and shall have a maximum SDR of 100.

The liner material shall be either of the following:

- Spray Wall, Sprayroq: The liner thickness shall be calculated using Equation X1.1 of ASTM Standard Specifications F1216. The enhancement factor, K, and Poisson Ration shall be taken a 7 and 0.3 respectively. The minimum value of ovality shall be 7.5%. The physical properties and design parameters used shall be based upon tests conducted by independent third party testing laboratories. The creep retention factor shall be determined by a 10,000 hour test. The contractor shall prepare the design calculations for the wall thickness and submit to the Engineer for approval.
- Quadex with AquataPoxy A-6 (with A-10 Primer) or PPC Polymorphic resin coating; or equal. The thickness of the Quadex liner shall be 1 inch. The thickness of Aquatapoxy or PPC coating shall be 80 mils.
- Permacast MS 10,000 High Strength Mortar with Cor+Gard: The thickness of the Permacast MS 10,000 mortar liner shall be 1 inch. The lining shall be provided with an 80 mil thick coating of Cor+Gard.
- Or equal

The Contractor shall furnish, prior to use of the materials, a satisfactory written certification of his compliance with the standards for all materials. The certification shall include third-party testing of the material for short term and long term physical properties.

Cleaning of Manhole or Valve Vault Prior to Rehabilitation

- The type of equipment and method to be used must be based on the condition of the manhole or valve vault at the time work commences. The selection of equipment must produce the results specified and will be at the Contractor's discretion, subject to the approval of the City.
- Whenever a manhole or valve vault is found to have debris, vacuum machines will be used to remove the major portion of the material before hydraulic equipment is used for final cleaning. The debris removed from the manhole or valve vault shall be disposed of by the Contractor. Other types of cleaning may be utilized by the Contractor if they are capable of producing the specified results and are approved by the City.
- The cleaning equipment and material must be capable of removing all dirt, oil, grease, rocks, bricks and other deleterious materials and obstructions from the manholes and valve vaults.
- The Contractor must cover all drain openings and appurtenances (i.e. restrictors and orifices).

### Surface Preparation

Proper surface preparation procedures must be followed to ensure adequate bond strength to any surface to be coated. Surface shall be prepared in accordance with ASTM D4258 Standard Practice for Surface Cleaning Concrete for Coating:

- Applicator must inspect all surfaces specified to receive a coating prior to surface preparation. Applicator must notify the City of any noticeable disparities in the surfaces that may interfere with the proper preparation or application of the repair mortar and / or coating(s).
- All concrete that is not sound or has been damaged by chemical exposure shall be removed to sound concrete surface.
- All contaminants, including; oils, grease, incompatible and/or damaged existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts or other contaminants, must be completely removed prior to any surface applications. Contaminants removal(s) and surface preparation method(s) must be based upon the conditions of the substrate and the requirements of the coating to be applied.
- Surfaces to receive coating must be cleaned and abraded to produce a sound concrete surface with adequate profile and porosity to provide a strong bond between the protective coating and substrate.
- Pressure water cleaning with a minimum of 5,000 psi at 5 gpm, using a rotating pencil nozzle, shall be used to clean and free all foreign material within the manhole.
- Detergent or steam cleaning must be used when grease and/or oils are present. All residues and materials resulting from the process of cleaning the manhole must be removed from the manhole prior to application of coating(s).
- Active water infiltration must be stopped by using a cementitious water plug or hydroactive grout that is compatible with the substrate and specific coating system.
- Prepared surfaces must be tested after cleaning, but prior to application of the coating, if a specified pH or moisture content of the concrete is required according to manufacturer's recommendations.
- The cleaned surface of each manhole to be coated with Non-Structural / High Sulfide resistant coating must be tested for moisture content in accordance with ASTM D4263 Test Method and the moisture content must be within the parameters identified in the Manufacturer's technical data sheets prior to applying coatings.
- Surfaces cleaned with detergents or nonsolvent-emulsifying agents must be tested for pH in accordance with ASTM D4262 Test Method.

### Installation

The lining shall be applied as per manufacture's recommendation. There shall be no visible sags or ripples on the coating. During application of the lining a wet film thickness gage shall be used to ensure uniform thickness. After applications of the lining, the coating shall be applied.

The coating shall also be checked visually for blisters and bug holes. All defects detected in the coating shall be repaired as per manufacturer's recommendations.

The Contractor shall develop a procedure for bonding the liner with the cured-in-place pipe line.

#### Coating Application

- Application procedures must conform to the recommendations of the coating manufacturer, including material handling, mixing, and environmental controls during applications, and safety and equipment.
- The coating application equipment must be specifically designed to accurately apply the specified coating material and must be regularly maintained and in proper working order.
- The Certified Applicator must conform to the Contractor Qualifications.
- The coating must be applied to a minimum thickness as specified herein.
- The manhole invert must not be coated to maintain the hydraulic flow line through the manhole.
- Temperature of the surface to be coated must be maintained between 40 deg F and 120 deg F during application, or otherwise required by the coating manufacturer. Prior to and during application, care should be taken to avoid exposure of direct sunlight or other intense heat source to the structure being coated. Where varying surface temperatures do exist, care should be taken to apply the coating when the temperature is falling versus rising (later afternoon into evening versus early morning into afternoon).

#### Warranty

- Contractor must warrant all Work within a work order against defects in materials and workmanship for a period of one year, unless otherwise noted from the date of final acceptance of all Work contained within that work order.
- Applicator must, within 30 calendar days after receipt of written notice thereof, repair defects in materials or workmanship which may develop during said one (1) year period, and any damage to other work caused by such defects or the repairing of same, at its own expense and without cost to the Owner.

#### Basis of Payment

Valve Vault Lining will be paid for at the contract unit price per each for VALVE VAULTS TO BE LINED, which price shall be payment for all labor, materials, and equipment necessary to perform the work described herein.

#### Filling Valve Vaults

This work shall consist of all work necessary to abandon and fill existing valve vaults when indicated on the plans or directed by the Engineer, in accordance with Section 605 of the Standard Specifications except as modified herein.

Change heading "SECTION 605. REMOVING OR FILLING EXISTING MANHOLES, CATCH BASINS, AND INLETS" to "SECTION 605. REMOVING OR FILLING EXISTING MANHOLES, VALVE VAULTS, CATCH BASINS, AND INLETS"

Revise Article 605.01 to read:

605.01 Description. This work shall consist of removing or filling existing manholes, valve vaults, catch basins, and inlets.

Revise the heading and the first sentence of Article 605.04 to read:

605.04 Filling Existing Manholes, Catch Basins, and Inlets. The tops of all existing manholes, valve vaults, catch basins, and inlets to be filled shall be removed to an elevation of at least 3 feet below the earth subgrade of the proposed improvement. If cones sections are in use they will be removed.

Revise Article 605.05 to read:

**605.05** Disposal of Excess Material. All material resulting from the filling or removing of existing manholes, valve vaults, catch basins, and inlets shall be disposed of by the Contractor according to Article 202.03.

Revise the third paragraph of Article 605.06, Basis of Payment, to read:

The work of filling existing manholes, valve vaults, catch basins, and inlets will be paid for at the contract unit price per each for FILLING MANHOLES, FILLING VALVE VAULTS, FILLING CATCH BASINS or FILLING INLETS.

### **Water Main Removal**

This work shall consist of the removal of portions of the existing water main and capping of the portions that are to remain in place in accordance with Section 551 of the Standard Specifications except as modified herein.

This work shall be performed at locations shown on the plans and/or subject to the review of the engineer. Excavation required for water main removal shall be performed in accordance with the applicable portion of the Special Provision "Water Main" included herein. Water main removal shall end either at a joint or at a location where the existing pipe has been saw cut so as to provide a smooth, even surface so as to allow a watertight joint. After removal of the existing pipe, the integrity of that portion which is to remain in place shall be checked to insure that the pipe end has not been damaged. Additional removal required by non-compliance with this Special Provision will be performed at the contractor's expense and no additional compensation will be allowed. The existing water main shall be capped at all locations where removal is specified. The valves that control the existing water distribution system may not be adequate to completely shut down the system and the contractor should expect some residual pressure to be preset when the cap is installed.

Any thrust blocking that is encountered in areas of water main removal or that conflicts with the proposed water main shall be removed and disposed of offsite.

If the excavation required for the removal operation falls within a paved area (existing or proposed), it shall be backfilled with trench backfill. Trench backfill shall be in accordance with the applicable requirements of the Special Provision "Trench Backfill, Special" included herein, except that trench backfill will not be measured for payment but shall be considered incidental to the contract unit price per lineal foot for water main removal.

This work will be paid for at the contract unit price per lineal foot for WATER MAIN REMOVAL, of the diameter specified, measured as removed. All fittings will be measured and paid for as WATER MAIN REMOVAL of the diameter specified. This price shall include excavation, capping of existing water mains that remain in place, thrust block removal and backfill as herein specified.

**Water Service Line (Special)**

This work shall consist of removing the existing domestic water service box and installing a new water service line from the proposed water main to a location adjacent to the existing service box, of a size equal to the existing water service line, but not less than 1.5" in diameter. This item shall include the tapping of the proposed main, installation of the curb stop, service line and service box of the type specified below.

The existing service boxes shall be removed and disposed of off site. The excavated area shall be backfilled an approved backfill material.

New water service connections from 1.5-inch diameter through 2-inch diameter shall be Type K (soft) copper tubing meeting specifications of the following Table and ASTM B-88 and B-251:

Table 9-2

<u>Nominal Size (Inches)</u>	<u>Actual Outside Diameter (Inches)</u>	<u>Wall Thickness (Inches)</u>	<u>Approx. Wt. Per Foot (Pounds)</u>
1.5	1.625	.072	1.37
2.0	2.125	.082	2.06

Water service connections over two (2) inches in diameter shall be ductile iron pipe water main and shall comply with all specifications for water mains, fittings, valves, valve vaults, and appurtenances. All copper connections shall be made with flared joints. Compression type joints shall be allowed underground off the corporation stop and roadway key stop. All water service shall have a minimum of five (5) feet - six (6) inches of cover over the service. At time of construction, all water services shall be left completely exposed until a representative completes inspection.

Twenty-four (24) hours notice is required for such inspection. At the time the inspection is made, a representative of the Contractor shall be present. The Contractor shall give twenty-four (24) hour notice to the Water Department of the Village, before any water main is to be tapped.

At the time the tap is made, a representative of the Contractor shall be present. A separate tap is required for a sprinkling system (fire protection). The domestic water shall be a separate line not connected to the sprinkling system. All water services four (4) inches or larger shall be subjected to a hydrostatic pressure of 150 psi gauged for a period of not less than one (1) hour. Such hydrostatic test shall be witnessed by an authorized representative of the Village. All water services used for fire protection four (4) inches in diameter or larger shall be gas chlorinated after satisfactory results of the hydrostatic test.

Water services shall be installed by pushing or auguring a hole beneath said roadway, sidewalk, and driveway and installing the water service pipe through the hole. The size of any openings in the roadway to connect the water service to the main shall be kept to a minimum.

Water service taps must be made before pressure testing.

#### Fittings

- a. The corporation stop shall be Mueller Company H-15000, or approved equal, and shall be installed by tapping the water main with an approved tapping machine. The tap shall be made in the upper third of the main, as close to forty-five (45°) degree angle as is practical. A tap into the top of the main will not be permitted. The service box shall be made in the United States.

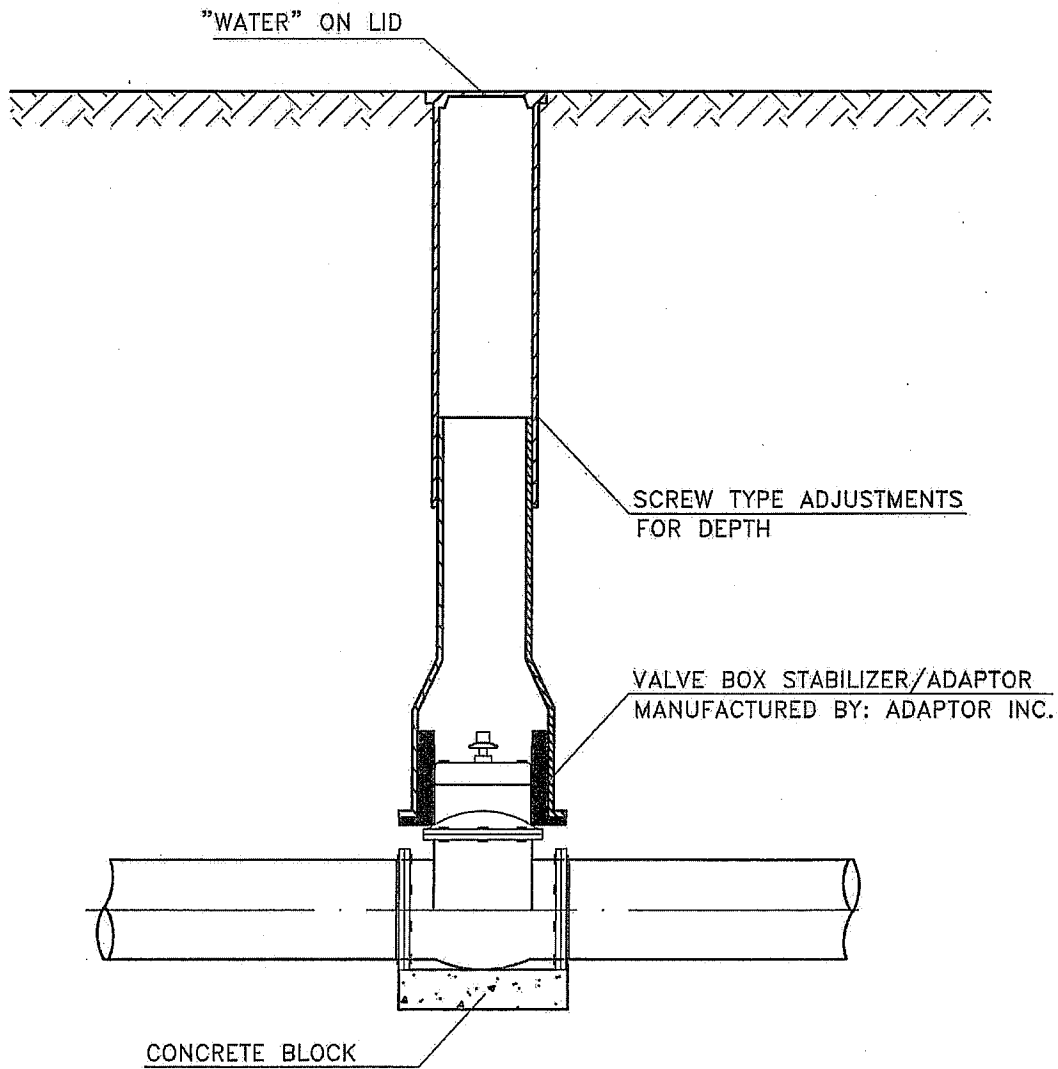
The curb stop shall be Mueller Company H-15204 with a Mueller Company buffalo box H-10350 and arched saddle.

- b. The roadway key stop and buffalo box shall be located within the parkway area eight (8) feet from the property line or as approved by the Engineer. The cover of the buffalo box shall have the word "Water" cast therein.
- c. The Contractor shall contact the Village Water Superintendent when all water service installations are completed and installed, in conformance with specifications, to set up final inspection for Village acceptance. Prior to the final inspection, the Contractor shall see that all on-surface water appurtenances are clearly visible, locatable and operable.

This work shall be measured and paid for at the contract unit price per each for WATER SERVICE LINE, SPECIAL, which payment will be full compensation for removal of the existing water service box and constructing a new water service including all excavation, trench backfill, auguring, connections to the water main and existing water service pipe, corporation stop, water service line, proposed domestic water service box, and curb stop.

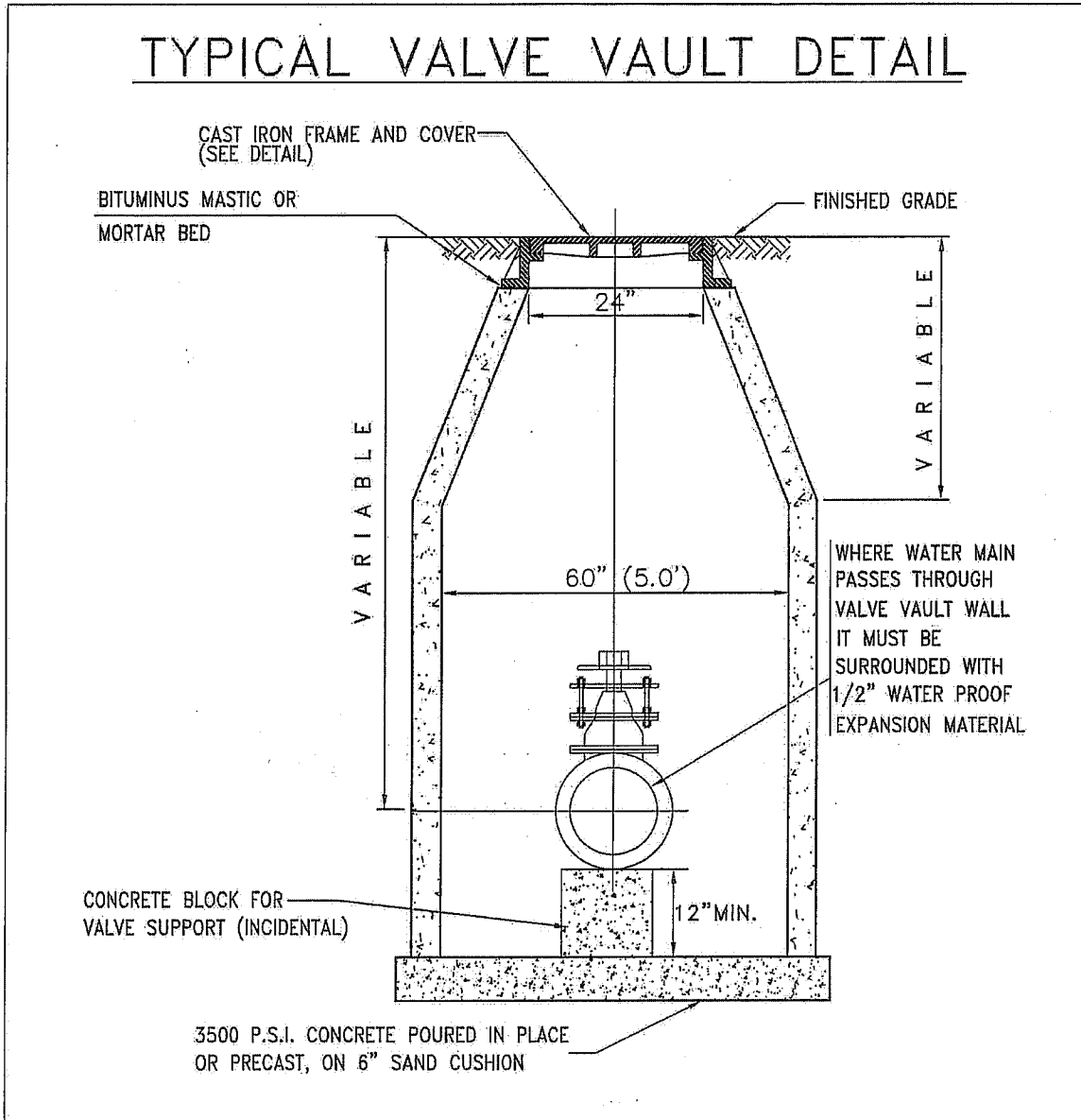
City of Evanston Water Main Details

TYPICAL VALVE BOX DETAIL

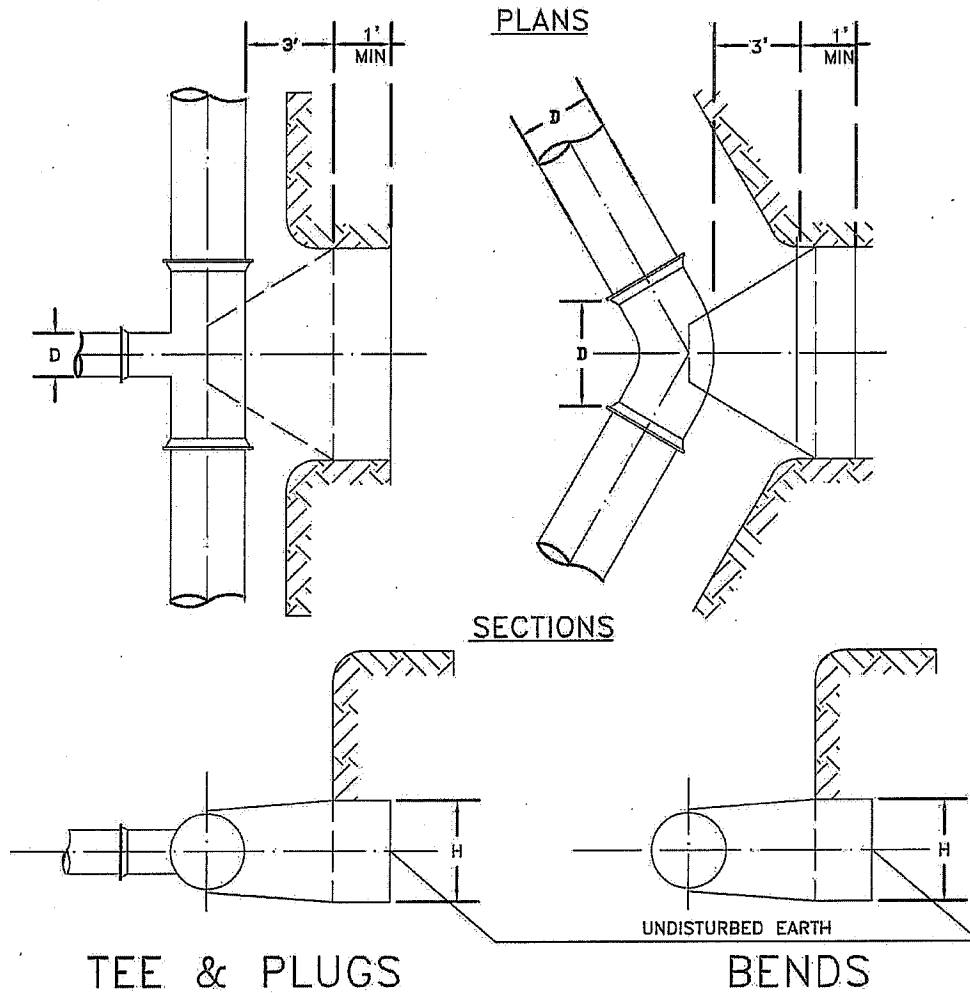




## TYPICAL VALVE VAULT DETAIL



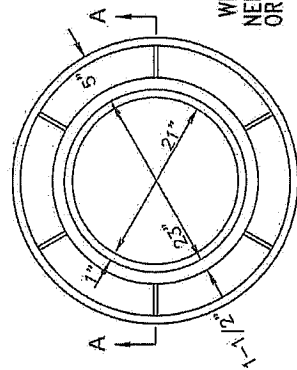
## TYPICAL THRUST BLOCK DETAILS



PIPE SIZE TYPE OF FITTING	6"		8"		10"		12"	
	L	H	L	H	L	H	L	H
TEE & PLUG	2'-0"	1'-6"	2'-0"	2'-0"	3'-0"	2'-0"	4'-6"	2'-0"
90° BEND	2'-0"	2'-0"	3'-0"	2'-0"	4'-6"	2'-0"	6'-0"	2'-0"
45° BEND	2'-0"	1'-0"	2'-0"	1'-6"	3'-0"	1'-6"	3'-6"	2'-0"
22-1/2° BEND	1'-0"	1'-0"	2'-0"	1'-6"	2'-0"	1'-6"	3'-0"	1'-6"
11-1/4° BEND	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	1'-0"

# DETAILS OF STANDARD FRAMES AND LIDS

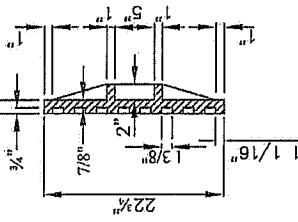
TYPE 1 FRAME



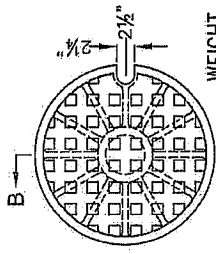
WEIGHT 390 LBS.  
 NEEHAH TYPE R1712  
 OR EQUAL

PLAN

CLOSED LID

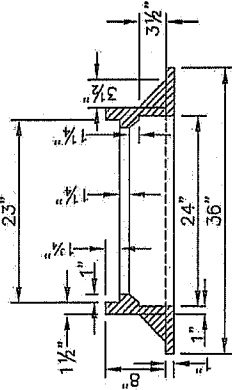


SECTION B-B



WEIGHT 150 LBS.

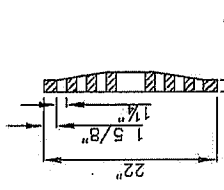
PLAN



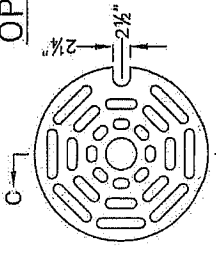
SECTION A-A

NOTE: THE DIAMETER OF THE LID SHALL BE SUCH  
 AS TO FIT THE FRAME WITHOUT WEDGING

OPEN LID



SECTION C-C



WEIGHT 116 LBS.

PLAN

**Catch Basins, Special**

**Manholes, Special**

**Inlets, Special**

This work shall consist of constructing catch basins, manholes or inlets, together with the necessary cast iron frames and lids, in accordance with Section 602 of the Standard Specifications, except as specified herein.

All catch basins, manholes, and inlets shall be provided with flexible rubber boots for all pipes to ensure a watertight seal between the pipe and catch basin, manhole, or inlet. The flexible rubber boots shall conform to ASTM Specification C-923. Each boot shall be included in the cost of CATCH BASINS, SPECIAL or MANHOLES, SPECIAL or INLETS, SPECIAL of the type and size specified and will not be paid for separately.

Catch basins, manholes, and inlets constructed in a location where an existing catch basin, manhole, or inlet was removed shall include up to five feet of pipe to connect each existing pipe. Sewer pipe shall be in accordance with the Standard Specifications, and connections to dissimilar existing sewers shall be made using Band Seal or Fernco couplings or approved equals with stainless steel shear rings. The pipe, couplings, and trench backfill shall be included in the cost of CATCH BASINS, SPECIAL or MANHOLES, SPECIAL or INLETS, SPECIAL and will not be paid for separately.

All closed lids shall have the words "STORM" or "SANITARY" cast into them.

This work shall be paid for at the Contract unit price per each for CATCH BASINS, SPECIAL or MANHOLES, SPECIAL or INLETS, SPECIAL of the type and size specified, which shall include the specified frame and grates or lids, couplings, structure labor, equipment, and any other materials required to perform the work described herein. Pipe in excess of the five feet necessary to tie into existing sewers will be paid as STORM SEWER or SANITARY SEWER of the applicable size.

**Chain Link Fence to be Removed and Re-Erected**

This work shall consist of removing fences at locations shown on the plans and as directed by the Engineer and the re-erection of the fence fabric, posts, and construction of new foundations. Also included is legal disposal of excess fencing, fence fabric, posts, and foundations.

This work also consists of furnishing, constructing, and removing a temporary fence near the Baha'i Temple from station 1077+50 to station 1084+20. The fence shall be 6 feet high and match the existing temporary green fencing being used on the property.

This work shall be paid for at the contract unit price per lineal foot for CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED. Any cutting of the fence or new fittings required by a new layout shall be considered included in the cost of this item.

**Catch Basin to be Filled to Maintain Flow**

This work shall conform to the requirements of Article 605.03 of the Standard Specifications.

This work shall be measured and paid for at the contract unit price per each for CATCH BASIN TO BE FILLED TO MAINTAIN FLOW, which payment will be full compensation for constructing this item including all excavation, materials, labor, tools, equipment and incidentals necessary.

**Storm Sewer, Special**

This work shall conform to the requirements of Article 611 of the Standard Specifications and as described below.

Each property within the Village shall have a storm sewer service that extends from the mainline storm sewer to the proposed sewer lateral cleanout located into the parkway. The mainline connection shall be made with a tee connection or as approved by the Village.

This work shall be measured and paid for at the contract unit price per lineal foot for STORM SEWER, SPECIAL of the diameter specified, which payment will be full compensation for constructing this item including all excavation, materials, labor, connections, tools, equipment and incidentals necessary.

Sewer lateral cleanouts will be paid for separately at the contract unit price for SEWER LATERAL CLEANOUT.

**Sewer Lateral Cleanout**

This work shall conform to the requirements of Section 34 Service Sewers of the Standard Specifications for Water & Sewer Main Construction in Illinois and as described below.

A cleanout shall be placed behind the back of curb at the end of each storm sewer service. The cleanout shall include the tee at the service, riser pipe, cleanout and caps. The cleanout shall be Geneco, or an approved equal.

This work shall be measured and paid for at the contract unit price per each for SEWER LATERAL CLEANOUT, which payment will be full compensation for constructing this item including all excavation, materials, tees, risers, cleanouts, labor, connections, tools, equipment and incidentals necessary.

**Maintenance of Existing Lighting System Complete**

Effective the date the contractor's activities (electrical or otherwise) at the job site begin, the contractor shall be responsible for the proper operation of all existing lighting systems which are part of, or which may be affected by the work until final acceptance or as otherwise determined by the Village of Wilmette and the City of Evanston.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the contractor shall initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact extent of the electrical equipment and systems to be maintained.

Existing lighting systems shall be defined as any lighting system or part of a lighting system in service, which has been installed under a previous contract. 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's responsibility shall include all applicable responsibilities of the Village of Wilmette and the City of Evanston. These responsibilities shall include the maintenance of lighting units, cable runs and lighting controls. In the case of a pole knockdown or sign light damage caused by normal vehicular traffic, the contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the engineer. Uncorrected deficiencies may be designated by the engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the contractor will be allowed to perform corrective action on specific lighting system equipment.

<b>INCIDENT OR PROBLEM</b>	<b>SERVICE RESPONSE TIME</b>	<b>SERVICE RESTORATION TIME</b>	<b>PERMANENT REPAIR TIME</b>
Control cabinet out	1 hour	4 hours	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	N/A
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	N/A
Outage of 75% of lights on one tower	1 hour	4 hours	N/A

**Service Response Time** -- amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.

**Service Restoration Time** – amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)

**Permanent Repair Time** – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

Damage caused by the contractor’s operations shall be repaired at no additional cost to the Contract and shall be included in this item and shall be repaired in accordance with all applicable sections of the latest addition of the Standard Specifications for Road and Bridge Construction.

The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods. The contractor shall demonstrate to the satisfaction of the engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

**Basis of Payment.** Maintenance of lighting systems shall be paid for at the contract lump sum price for the duration of the Contract for MAINTENANCE OF EXISTING LIGHTING SYSTEM COMPLETE, which shall include all work as described herein.

**Storm Sewer Adjacent To Or Crossing Water Main**

Effective: February 1, 1996      Revised: March 31, 1998

This work consists of construction storm sewer of the specified diameter adjacent to or crossing water main, at the locations shown on the plans, meeting the material and installation requirements of the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and the applicable portions of Section 550 of the Standard Specifications.

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

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

Basis of Payment: This work will be paid for in accordance with Article 550.10 of the Standard Specifications, except the pay item shall be STORM SEWER (WATER MAIN REQUIREMENTS), of the diameter specified, and shall include all materials, labor, equipment, concrete collars and encasing pipe with seals.

**Brick Pavement Removal and Replacement**

This work shall consist of removing the existing brick pavers and base material and replacing the brick pavers as shown in the plans and described below upon a new PCC base course. This item includes removing and properly disposing of failed sand, aggregate, bituminous, or concrete base material after the bricks have been removed. The cost of these removals shall be included in the contract unit price for BRICK PAVEMENT REMOVAL AND REPLACEMENT.

For roadways that consist of brick pavers overlaid with bituminous concrete, the bituminous concrete shall be removed and properly disposed of. In addition, any areas of bituminous pavement patching that exist within the proposed brick pavement area shall be removed full depth and properly disposed of. The cost of full depth bituminous pavement removal shall not be paid for separately, but shall be included in the contract unit price for BRICK PAVEMENT REMOVAL AND REPLACEMENT. The Contractor shall submit in writing to the Village and Engineer his/her method of bituminous removal over the brick pavers, for approval, prior to beginning the work. If the proposed method of removing the bituminous concrete over the brick pavers is unacceptable to the Village and Engineer or the method implemented in the field causes damage to the brick pavers, the Contractor shall resubmit an alternate method of removal to the Village and Engineer for approval. The Contractor is responsible for securing all approvals of his/her method of removal and no additional compensation will be made to the Contractor for any incurred delays of the work.



The brick pavers shall be cleaned and palletted after removal. The Contractor has the option of storing the brick on-site or at a secure location provided by the Contractor off-site. It is the Contractor responsibility to determine the quantity of brick pavers that can be stored on-site in the parkway within the project limits. All costs associated with storing the brick pavers on-site or removing the bricks to an off-site location will not be paid for separately, but shall be included in the contract unit price for BRICK PAVEMENT REMOVAL AND REPLACEMENT.

The Contractor will not be allowed to store brick pavers in the parkway or roadway outside of the project limits. If the brick is stored on-site it must be placed at a location determined by the Village and Engineer. Any damage to existing conditions that occurs outside of the limits determined by the Village and Engineer shall be repaired at the cost of the Contractor. Each pallet of brick stored on-site must be contained by the usage of shrink-wrap or another approved method of containing the brick. Cleaning shall consist of removing all debris, bituminous materials, mud, markings, etc. with water and a brush. Prior to brick removal, the Contractor shall cleanly saw cut the entire length of the existing curb and gutter at the edge of pavement line.

Upon completion of construction of the roadway in accordance with the detail shown in the plans, a one inch layer of sand, gradation FA-2 shall be constructed in accordance with the detail in the plans. The one inch layer of sand shall be compacted with a hand compactor so that the finish is free of all undulations, ruts, tire mark and depressions. Prior to the placement of the brick pavers the Engineer shall visually inspect the portion of roadway to receive the brick pavers. The Contractor shall repair any area deemed necessary by the Engineer by adding additional sand and compacting the area.

The pattern of the brick pavers shall be identical to the pre-existing condition of the roadway and adjacent streets prior to construction. The Contractor shall take a minimum of ten photographs of the roadway prior to removing the brick pavers. Any damaged brick pavers shall be disposed of and will not be permitted to be installed. The Engineer shall inspect the brick pavers prior to installation. Any brick pavers deemed unsuitable for installation shall be properly disposed of. If a shortfall of brick pavers is encountered, the Contractor shall transport from the Village yard and install any additional required brick pavers to complete the limits as noted on the plans. The additional brick pavers shall be furnished by the Village. No additional compensation will be made for transporting and installing additional brick pavers required, but it shall be include in the unit cost for BRICK PAVEMENT REMOVAL AND REPLACEMENT.

This work will be paid for at the contact unit price per square foot for BRICK PAVEMENT REMOVAL AND REPLACEMENT, which price shall be payment in full for:

1. Removing, cleaning, stacking, saw-cutting, transporting and installing the brick pavers;
2. Transporting and installing additional brick pavers supplied by the Village if required;

3. Removing and disposing the bituminous concrete layer over the existing brick pavers;
4. Removing and disposing any full depth bituminous pavement patches;
5. Removing and disposing of base material;
6. Furnishing and installing the bedding layer of sand, PCC base course and aggregate subgrade; and,
7. All labor and all equipment and materials necessary to complete the work as specified herein.

### **Concrete Ribbon**

This work consists of constructing a concrete ribbon at the locations shown in accordance with the applicable portions of Sections 606 and 440 of the Standard Specifications, details in the plans and as directed by the Engineer.

The concrete ribbon shall be constructed at the elevation as shown on the plan. An expansion joint shall be constructed at each edge of pavement with one #6 epoxy coated dowel bar installed at each location where the expansion joint meets the curb. There shall be a tooled control joint at the crown (centerline of roadway). The concrete ribbon shall be constructed to match the proposed cross slope of the pavement at each location. The concrete ribbon shall be constructed to the depth of the proposed pavement section including the aggregate base course layer. If the Contractor removes or damages the existing curb, gutter or curb and gutter adjacent to the proposed concrete ribbon, the Contractor will be required to remove and replace that portion at his own expense to the satisfaction of the Engineer. All additional removal of existing pavement or subgrade materials in order to construct the concrete ribbon as specified shall be considered incidental to the price for CONCRETE RIBBON.

This work will be paid for at the contract unit price per foot for CONCRETE RIBBON which price shall include all labor, material and equipment necessary to construct this item as specified herein.

### **Detectable Warnings**

Description: This work shall consist of furnishing and installing detectable warnings at the locations described in Article 424.09 of the Standard Specifications.

Material Permitted: Meta Panels in yellow manufactured by MetaDome of Madison, WI shall be used for all detectable warnings, or an approved equal.

Basis of Payment: This work will be paid for at the contract unit price per square foot for DETECTABLE WARNINGS.

**Portland Cement Concrete Sidewalk 5 Inch (City of Evanston)**

Portland Cement Concrete Sidewalk shall be constructed in one course, 5 inches thick, on a prepared subgrade in accordance with the following specifications and the lines and grades established by the Engineering Department of the City of Evanston.

The sidewalk shall be constructed of Portland Cement, Class X Concrete which shall have a minimum of 6.0 bags of Type 1 cement per cubic yard. The course aggregate used shall contain a maximum of 2%, by volume, deleterious material (commonly called Chert-free Aggregate) and the maximum size of stone shall be  $\frac{3}{4}$ ". Air content shall be not less than 5% nor more than 8%, and the slump shall not exceed 4". 28-day compressive strength tests resulting in less than 3500 p.s.i. or modulus of rupture less than 650 pounds per square inch at the end of 14 days when tested by standard methods shall be cause for removal and replacement, at Contractor's cost.

The subgrade shall be tamped or rolled until thoroughly compacted and shall be constructed true to grade and cross section for the bottom of the sidewalk. Where sidewalk is raised above the existing grade, fine aggregate, meeting the approval of the City Engineer, shall be used. The cost of this material shall be incidental to the price of Portland Cement Concrete Sidewalk 5 Inch.

Side forms shall be of lumber of not less than 2 inch nominal thickness and 6 inch nominal width, or steel or equal rigidity. They shall be held securely in place by stakes, braces, or other means, with the top edge true to line and grade. The forms for the sidewalk shall be set so that the slab will have a slope of not less than  $\frac{1}{4}$  inch and not more than  $\frac{3}{8}$  inch per foot from the edge nearest the property line toward the edge farthest from the property line.

The subgrade shall be moistened just before the concrete is placed. Concrete shall not be placed on a soft, muddy, or frozen subgrade. The concrete shall be placed in successive batches for the entire width or the slab, struck off from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch higher than the finished slab, tamped until all voids are removed and free mortar appears on the surface, thoroughly spaded along the edges, struck off to the proper grade, and finished to a plane, even surface with floats and trowels. The final troweling shall be done with a steel trowel, leaving a smooth even surface. After the water sheen has disappeared, the surface shall be given a final finish by brushing with a whitewash brush. The brush shall be drawn across the sidewalk at right angles to the edges of the walk, with adjacent strokes slightly overlapping, producing a uniform, slightly roughened surface with parallel brush marks.

The surface shall be divided by grooves constructed at right angles to the center line of the sidewalk. These grooves shall extend to  $\frac{1}{4}$  the depth of the sidewalk, shall be not less than  $\frac{1}{8}$  inch nor more than  $\frac{1}{4}$  inch in width, and shall be edged with a jointing or edging tool having  $\frac{1}{4}$  inch radius. The grooves shall be 5 feet apart unless otherwise ordered by the Engineer. The edges of the slabs, including those along expansion joints, shall be edged as described above.

This work will be paid for at the contract unit price per square foot for PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, which price shall include payment in full for all materials, labor and equipment necessary to perform the work as here in specified.

**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 feet. The minimum compacted thickness shall be 6 inches. The maximum grade shall be eight percent, except as required to match the existing grade.
- (b) Commercial Entrance. The minimum width shall be 24 feet. The minimum compacted thickness shall be 9 inches. The maximum grade shall be six percent, except as required to match the existing grade.
- (c) Road. The minimum width shall be 24 feet. The minimum compacted thickness shall be 9 inches. The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.
- (d) Sidewalk. The minimum width shall be four feet. The minimum compacted thickness shall be 4 inches. The grade and elevation shall be the same as the removed sidewalk, except as required to meet the grade of any new sidewalk 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. For sidewalk, aggregate surface course for temporary access will be measured for payment as a lump sum. 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). Aggregate surface course for temporary access for sidewalks will be paid for at the contract unit price each for TEMPORARY ACCESS WALK.

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.”

**Aggregate Subgrade 12” (300mm)**

Effective: May 1, 1990      Revised: January 1, 2007

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

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
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The aggregate subgrade shall be placed in two lifts consisting of an 8 inch lower lift and a 4 inch 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 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.

**Temporary Pavement**

This item shall include all materials, labor, and equipment necessary to construct Temporary Pavement at the locations shown on the plans or as directed by the Engineer.

The Temporary Pavement, at the option of the contractor, shall be either 8" P.C. Concrete Base Course or 10" Hot-Mix Asphalt Base Course. The Temporary Pavement shall be constructed in accordance with Sections 353, 354, 355, 356 and 358 of the Standard Specifications and details in the plans except as here in specified.

No extra compensation will be given for the construction of the Temporary Pavement in the winter months with P.C. Concrete Base Course or HMA.

Removal of Temporary Pavement is included in the cost of this item.

This work will be paid for at the contract unit price per square yard for TEMPORARY PAVEMENT, which price shall include payment in full for all materials, labor and equipment necessary to perform the work as here in specified.

**Driveway Pavement Removal and Replacement**

**Sidewalk Removal and Replacement**

This work consists of removing and replacing driveways and courtesy sidewalks constructed with bricks, pavers, cobblestones, or other special materials, herein referred to as "special materials" at the locations shown in the plans in accordance with the applicable portions of Sections 423 and 440 of the Standard Specifications, details in the plans and as directed by the Engineer with the following special conditions.

This work shall consist of removing the special materials and replacing them as shown in the plans and described below a proposed base or within the item being replaced. This item includes removing and properly disposing of sand, aggregate, bituminous, or concrete base material after the special materials have been removed. The cost of these removals shall be included in the contract unit price for DRIVEWAY PAVEMENT REMOVAL AND REPLACEMENT or SIDEWALK REMOVAL AND REPLACEMENT.

The special materials shall be cleaned and palletted after removal. The Contractor has the option of storing the special materials on-site or at a secure location provided by the Contractor off-site. It is the Contractor responsibility to determine the quantity of materials that can be stored on-site in the parkway within the project limits. All costs associated with storing the special materials on-site or removing the special materials to an off-site location will not be paid for separately, but shall be included in the contract unit price for DRIVEWAY PAVEMENT REMOVAL AND REPLACEMENT or SIDEWALK REMOVAL AND REPLACEMENT.

The Contractor will not be allowed to store the special materials in the parkway or roadway outside of the project limits. If the special materials are stored on-site it must be placed at a location determined by the Village and Engineer. Any damage to existing conditions that occurs outside of the limits determined by the Village and Engineer shall be repaired at the cost of the Contractor. Each pallet of special materials stored on-site must be contained by the usage of shrink-wrap or another approved method of containing the materials. Cleaning shall consist of removing all debris, bituminous materials, mud, markings, etc. with water and a brush.

The pattern of the special materials shall be identical to the pre-existing condition of the driveway and sidewalk prior to construction. The Contractor shall take a minimum of six photographs of each location prior to removing the special materials. Any damaged special materials shall be disposed of and will not be permitted to be installed. The Engineer shall inspect the special materials prior to installation. Any special materials deemed unsuitable for installation shall be properly disposed of. If a shortfall of special materials is encountered, the Contractor shall secure any additional required special materials to complete the limits as noted on the plans. The additional special materials shall be furnished by the Contractor. No additional compensation will be made for transporting and installing additional special materials required, but it shall be include in the unit cost for DRIVEWAY PAVEMENT REMOVAL AND REPLACEMENT or SIDEWALK REMOVAL AND REPLACEMENT.

This work will be paid for at the contact unit price per square yard for DRIVEWAY PAVEMENT REMOVAL AND REPLACEMENT and per square foot for SIDEWALK REMOVAL AND REPLACEMENT, which price shall be payment in full for:

1. Removing, cleaning, stacking, saw-cutting, transporting and installing the special materials;
2. Transporting and installing additional special materials supplied by the Contractor if required;
3. Removing and disposing of base material, driveway pavement and sidewalk;

4. Furnishing and installing the bedding layer of sand, PCC base course driveway pavement, sidewalk, and aggregate subgrade; and,
5. All labor and all equipment and materials necessary to complete the work as specified herein.

**Dust Control Watering**

This shall consist of the exclusive control of dust resulting from construction operations and is not intended for use in the compaction of earth embankments, as specified under Article 205.06 of the Standard Specifications.

Dust shall be controlled by the uniform application of sprinkled water and shall be applied within two hours of when directed by the Engineer, in a manner meeting his approval.

All equipment used for this work shall meet with the Engineer's approval and shall be equipped with adequate measuring devices for metering the exact amount of water discharged. All water and calcium chloride used shall be properly documented by ticket or other approved means.

This work will be measured in units of gallons of water applied. One unit will be equivalent to 1,000 gallons of water applied.

This work will be paid for at the contract unit price per unit as DUST CONTROL WATERING, which price shall be payment in full for furnishing all labor, water and equipment for controlling dust as herein specified.

**Sanitary Sewer**

This work shall consist of constructing new sanitary sewer pipe at the locations shown on the plans or as directed by the engineer.

THE EXCAVATION, BEDDING, PIPE LAYING, BACKFILLING, AND CLEAN UP SHALL BE COMPLETED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF DIVISIONS II AND III OF THE WATER AND SEWER SPECIFICATIONS. THE BEDDING FOR THE PIPE SHALL BE CA-11 OR CA-13 COARSE AGGREGATE, AND SHALL BE PLACED FROM 4" BELOW TO THE CENTER OF THE PIPE. THE COST FOR THE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT PRICE FOR THE SANITARY SEWER.

The proposed sanitary sewer shall meet the requirements of the Metropolitan Water Reclamation District as shown in the plans, and shall be polyvinyl chloride (PVC) pipe or reinforced concrete pipe (RCP).

Where sanitary sewer is designated on the plans as "WM REQMTS", the pipe shall conform to the requirements of SANITARY SEWER, DUCTILE IRON.



Connections to existing sanitary sewer pipe shall be made with Band-Seal (Non-Shear) or equal couplings subject to the review of the engineer. The Non-Shear couplings shall be equipped with stainless steel bands.

Trench bracing/protection shall be in accordance with Article 550.04 of the Standard Specifications and shall be included in the unit price for SANITARY SEWER.

Excavations may require dewatering due to subsurface water, seepage and/or surface precipitation. All dewatering necessary to keep the sewer trench dry shall be included in the unit price for SANITARY SEWER.

The contractor will be required to televise the new sanitary sewer before pavement restoration is performed. Payment for the new sanitary sewer will not be made until the Village has reviewed and approved the condition of the new sewer.

This work will be paid for at the contract unit price per lineal foot for SANITARY SEWER of the diameter specified. The lineal footage between the connections of the existing sanitary sewer will be measured in place for payment. Sanitary sewer constructed from manhole to manhole will be measured in place from the center of each manhole. The contract unit price shall include all labor, material, and equipment necessary to complete the work as specified. Trench backfill will be paid for separately at the contract unit price for TRENCH BACKFILL, SPECIAL.

**Sanitary Sewer, Ductile Iron**

This work shall consist of constructing new sanitary sewer pipe at the locations shown on the plans or as directed by the engineer.

THE EXCAVATION, BEDDING, PIPE LAYING, BACKFILLING, AND CLEAN UP SHALL BE COMPLETED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF DIVISIONS II AND III OF THE WATER AND SEWER SPECIFICATIONS. THE BEDDING FOR THE PIPE SHALL BE CA-11 OR CA-13 COARSE AGGREGATE, AND SHALL BE PLACED FROM 4" BELOW TO THE CENTER OF THE PIPE. THE COST FOR THE BEDDING SHALL BE INCIDENTAL TO THE CONTRACT UNIT PRICE FOR THE SANITARY SEWER, SPECIAL.

The proposed sanitary sewer shall be ductile iron pipe conforming to ANSI A-21.51 and the pipe joints shall conform to ANSI A-21.11.

Connections to existing sanitary sewer pipe shall be made with Band-Seal (Non-Shear) or equal couplings subject to the review of the engineer. The Non-Shear couplings shall be equipped with stainless steel bands.

Trench bracing/protection shall be in accordance with Article 550.04 of the Standard Specifications and shall be included in the unit price for SANITARY SEWER, DUCTILE IRON.

Excavations may require dewatering due to subsurface water, seepage and/or surface precipitation. All dewatering necessary to keep the sewer trench dry shall be included in the unit price for SANITARY SEWER, DUCTILE IRON.

The CONTRACTOR will be required to televise the new sanitary sewer before pavement restoration is performed. Payment for the new combined sewer will not be made until the VILLAGE has reviewed and approved the condition of the new sewer.

This work will be paid for at the contract unit price per lineal foot for SANITARY SEWER, DUCTILE IRON of the diameter specified. The lineal footage between the connections of the existing sanitary sewer will be measured in place for payment. Sanitary sewer constructed from manhole to manhole will be measured in place from the center of each manhole. The contract unit price shall include all labor, material, and equipment necessary to complete the work as specified. Trench backfill will be paid for separately at the contract unit price for TRENCH BACKFILL, SPECIAL.

#### **Sanitary Sewer Manholes**

This work shall consist of constructing manholes, together with the necessary cast iron frames and lids, in accordance with Section 602 of the Standard Specifications, except as specified herein.

Sanitary Sewer Manholes constructed at the locations indicated on the plans shall be provided with rubber gasket couplings for all pipes to ensure a watertight seal between the pipe and manhole. The rubber gasket couplings shall conform to ASTM Specification C-923. Manholes shall be provided with epoxy coated cast iron steps on 16" centers from frame to invert. The outside of the manhole shall be coated with a waterproofing membrane and internal chimney seals shall be provided in accordance with ASTM C-923. The rubber gasket couplings, waterproof coating, chimney seal, and stops shall be included in the cost of combined manholes and will not be paid for separately.

Manholes constructed in a location where an existing manhole was removed shall include five feet of pipe for each existing pipe location. Sanitary sewer pipe shall be PVC, RCSP or ductile iron in accordance with the Special Provisions, connections shall be made with mission couplings. The pipe, collar, and trench backfill shall be included in the cost of manholes and will not be paid for separately.

Lids for combined manholes shall have the word "SANITARY SEWER" cast into them.

This work shall be paid for at the contract unit price per each for MANHOLES, SANITARY, of the size specified together with the specified frames and lids.

**Sanitary Sewer Drop Manholes**

This work shall consist of constructing manholes, together with the necessary cast iron frames and lids, in accordance with Section 602 of the Standard Specifications, except as specified above under Sanitary Sewer Manholes and with the following additions.

For sanitary manholes that have an elevation difference of 2 feet or more, a drop manhole is required. These manholes must include a drop structure as shown on the MWRD detail included in the plans.

This work shall be paid for at the contract unit price per each for DROP SANITARY SEWER MANHOLES, with the specified frames and lids.

**Manholes, Sanitary, 7'-Diameter, Type 1 Frame, Closed Lid**

This work shall consist of constructing manholes, together with the necessary cast iron frames and lids, in accordance with Section 602 of the Standard Specifications, except as specified above under Sanitary Sewer Manhole and with the following additions.

This manhole should conform to the requirements of IDOT Standard Drawing 602411, Manhole Type A, 7'-Diameter.

This work shall be paid for at the contract unit price per each for MANHOLES, SANITARY, 7'-DIAMETER, TYPE 1 FRAME, CLOSED LID.

**Sanitary Service Connection**

This work shall be performed in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois" and the details on the plans. An Adjustable Repair Coupling (ARC) approved by the Engineer shall be used to make the connection between the proposed and existing service. The couplings shall be flexible, non-shear and equipped with stainless steel bands. The proposed service shall be connected to the mainline sewer with a Village approved Bell End Tee (SDR26/ASTM D2241) or as approved by the Village.

Temporary connections will be required between the proposed and existing services prior to installation of the proposed mainline sanitary sewer.

The limits of the connection shall extend to the right-of-way line for sewers along Sheridan Road. Along Michigan Avenue, the connection limits are within the limits of the excavated trench.

When a sanitary service is installed beneath the drip line of a tree, the pipe shall be installed by pushing or auguring a hole beneath the drip line and installing the sanitary service pipe through the hole in accordance with applicable portions of Section 552 of the Standard Specifications.

This work will be paid for at the contract unit price per each, for SANITARY SERVICE CONNECTION, which price shall include all labor, materials, fittings, reducers, riser elbows, temporary connections, augers, and equipment necessary to complete the work shown on the plans and specified herein.

The sanitary service pipe between the riser and connection to the existing service pipe shall be paid for at the contract unit price per foot for SANITARY SEWER, of the size specified. Trench backfill will be paid for separately at the contract unit price for TRENCH BACKFILL, SPECIAL.

#### **Sanitary Manholes to be Adjusted**

This item of work shall consist of the adjustment and repair of the sanitary sewer manholes in accordance with the applicable portions of Section 602 of the Standard Specification, except as herein modified.

The manhole rims shall be adjusted to meet the proposed elevations. The manholes shall be thoroughly cleaned and all cracks and joints shall be sealed with mortar approved by the Engineer. Two rows of extrudible preformed mastic gasket shall be installed under the manhole frame.

Chimney seals such as Wrapid Seal Manhole Encapsulation System, Cretex External Manhole Chimney Seal, or approved equal shall be provided.

Sanitary manholes with damaged frame and grates as determined by the Engineer shall be removed and replaced with new frame and grate. The removed frame and grate shall be disposed of off site.

This work shall be paid for at the contract unit price each for SANITARY MANHOLES TO BE ADJUSTED which price shall be payment in full for furnishing all materials, labor and equipment necessary to adjust and repair the sanitary manhole complete in place.

#### **Metropolitan Water Reclamation District of Greater Chicago Manhole Adjustment**

This work shall be in accordance with MWRDGC Standard No. 8-121 and all applicable portions of Section 602 of the "Standard Specifications for Road and Bridge Construction" except as modified herein:

Section 602.04. Concrete. All concrete shall be Class R.

Section 602.10. Furnishing and Placing Casting. MWRD will furnish new frames and covers for MWRD manholes to be adjusted. The contractor shall coordinate this work with MWRD.

This work shall be paid for at the contract unit price each for SANITARY MANHOLES TO BE ADJUSTED which price shall be payment in full for furnishing all materials, labor and equipment necessary to adjust and repair the sanitary manhole complete in place.

**Grates, Special**

Description: This work shall consist of furnishing and installing grates at the end of the 54-inch diameter and 36-inch diameter storm sewer pipe outfalls into the North Shore Channel per the details shown in the plans and according to Section 604 of the Standard Specifications, except as modified herein.

Material Permitted: All steel elements shall conform to the requirements of AASHTO M 270 Grade 36. All steel grate elements shall be galvanized according to AASHTO M 111 and ASTM A 385. All bolts, nuts, and washers shall be galvanized according to AASHTO M 232.

Basis of Payment: This work will be paid for at the contract unit price per each for GRATES, SPECIAL.

**Television Inspection of New Sanitary Sewer**

Description. The contractor shall televise all of the new sewer installed in the presence of the Village or engineer at the conclusion of construction or as directed by the Village of engineer. The contractor shall provide a videotape copy of this inspection to the Village to assist Department personnel in the evaluation of the condition of the new sewers and sewer structures.

**Construction Requirements.** Arrangements shall be made by the contractor for video taping in conformance with the following:

- A. The video operator must have at least one (1) year of experience in televising sewer mains.
- B. The entire televised inspection process must be done in the presence of the engineer or the Village personnel.
- C. Video tapes shall be high quality in VHS format and recorded in either SP or LP modes. Recordings made in SLP or EP modes are not acceptable. Any out-of-focus video recordings, of portions thereof, shall be cause for rejection of the video recording and will necessitate re-televising the sewer at the contractor's expense.
- D. The contractor shall turn over original VHS video tape to the Village immediately after taping with the tab removed so as to prevent accidental erasure.

E. Televising shall be done one section at a time, each section isolated from the remainder of the sewer line as required. Sufficient water shall be supplied to cause drainage within the isolated section prior to televising.

F. The contractor shall not be entitled to any additional working days due to delays in securing the video taping services of a private vendor.

Televising equipment shall include the television camera, television monitor, cables, power source, lights and other equipment necessary to the televising operation. The camera shall be specifically designed and constructed for operation in connection with sewer inspection. The color camera shall have a high resolution lens, and shall be operative in 100 percent humidity conditions. The camera shall be capable of spanning 360-degrees circumference and 270-degrees on the horizontal axis, so that all service connections can be properly inspected. Focal distance shall be adjustable through a range of from 1-inch to infinity.

The camera shall be mounted on skids suitably sized for each pipe diameter to be investigated. Lighting for the camera shall minimize reflective glare. Camera and lighting quality shall be suitable to provide a clear, continuously in-focus picture of the entire inside periphery of the sewer pipe for all conditions encountered during the work. The remote reading footage counter shall be accurate to 0.20-foot over the length of the particular section being inspected and shall be mounted over the television monitor. The camera television monitor and other components of the video system shall be capable of producing a minimum 350-line resolution color video picture.

The camera shall be moved through the line in either direction at a uniform rate, stopping when necessary to ensure proper documentation of the condition of the sewer line but in no case shall the television camera be pulled at speed greater than 30 feet per minute. Manual winches, power winches, TV cable and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer line conditions shall be used to move the camera through the sewer line.

If during the televising operations, the television camera will not pass through an entire sewer section, the contractor, shall re-set his equipment in a manner so that the inspection can continue opposite the obstruction. If the television camera encounters an obstruction within a section not accessible to a manhole, the contractor shall notify the engineer.

Whenever non-remote powered and controlled winches are used to pull the television camera through the line, telephones, radios, or other suitable means of communications shall be set up between the manholes of the section being inspected to ensure that adequate communications exist between members of the crew. The importance of accurate distance measurement is emphasized. Measurement for location of defects shall be above ground by means of a meter device. Marking on the cable, or similar, which would require interpolation for depth of manhole will not be acceptable.

The accuracy of the measurement meters shall be checked daily by use of a walking meter, roll-a-tape, or other suitable device. Footage measurement shall begin at the center line of the upstream manhole, unless permission is given by the Village to do otherwise. Footage shall be shown on the video date view at all times.

Audio and written documentation shall accompany all video tapes submitted to the Village. The voice recording on the video tapes shall make brief but informative comments on data of significance, including, but not limited to, the locations of unusual conditions, storm sewer connections, collapsed sections, the presence of scale and corrosion and other discernable features.

The video tape(s) shall include the following:

- I. DATA VIEW:
  1. Report Number.
  2. Date of TV inspection.
  3. Upstream and downstream manhole or station numbers.
  4. Current distance along reach (tape counter footage).
  5. Printed labels on tape container and tape cartridge with location information, date, format and other descriptive information.

Defects or deficiencies determined by these inspections shall be immediately corrected by the contractor to the approval of the Village. If, in the judgment of the Village, the sewer has been damaged, the contractor will be required to replace the damaged pipe at the Contractor's expense by a method approved by the Village.

During the process of televising the sewer pipe sewer must remain in operation. The contractor will not be allowed to restrict the flow in the sewer at any time. If by-pass pumping is required, the sewage shall be pumped to the next combination manhole downstream. This work will not be paid for separately but shall be included in the cost for TELEVISION INSPECTION OF NEW SANITARY SEWER.

The contractor will be responsible for accurately noting the exact locations of all sanitary sewer services on a set of plans. After the plans have been updated a copy shall be sent to the Village for their review. If the Village determines that a service can not accurately be located based on the video tapes the contractor will be required to excavate to locate the existing service. Excavation will be paid for as EXPLORATION TRENCH.

In cases where both ends of the existing sanitary sewer are not accessible by way of a manhole, the contractor will be responsible for excavating and exposing the upstream end of the sewer in order to televise it. This work will be paid for as EXPLORATION TRENCH. After televising the sewer main the excavated area shall be properly backfilled with aggregate if it is adjacent to sidewalk, pavement, curb and gutter. The aggregate will be paid for as TRENCH BACKFILL, SPECIAL.

The sanitary sewer shall be operation at all times. Any sewer damaged by the contractor shall be repaired at the contractor's expense. All sewers removed to gain access shall be repair in accordance with the Standard Specifications. This work will not be paid for separately but shall be included in the cost for TELEVISION INSPECTION OF NEW SANITARY SEWER.

**Basis of Payment.** This work will be measured and paid for at the contract unit price per foot for TELEVISION INSPECTION OF NEW SANITARY SEWER regardless of various pipe sizes, which shall include only those sewers installed as directed in the set of plans, or additional sewer segments televised as directed by the engineer or Village.

#### **Television Inspection of Sewer**

The MWRD Interceptor within the project limits shall be tested by closed circuit T.V. prior to work beginning and at the conclusion of the project. The entire length between manholes of sewer sections shall be televised. The Contractor shall submit one color T.V. tape (in VHS format) of the sewer and 2 copies of the televising report to the Engineer, showing distance between manholes, location of service connections, direction of flow and direction of T.V. camera during televising.

Prior to televising, the Contractor shall flush and clean all sewers. If the sewers are found not to be clean during televising, the Contractor will be required to flush and clean and re-televising said sewers found not to be clean.

Unless otherwise specified, sewers must be straight between manholes. They may be tested for straightness by flashing a light from manhole to manhole, lamping, or by other suitable means.

The cost of televising sewers shall be paid for at the contract unit price per foot for TELEVISION INSPECTION OF SEWER which price shall include all materials, equipment and labor required for the successful televising of all sewer sections. If the inspected sewers are not acceptable, the problems found shall be repaired and the T.V. test repeated until satisfactory at no additional cost to the Village/City.

#### **Cofferdam (Location -1), Cofferdam (Location-2)**

Description: Work under this item shall be in accordance with Section 502 of the Standard Specifications, except as modified herein.

If the design of the cofferdam requires the use of seal coat concrete, the furnishing, placing, and removal of the seal coat concrete shall be included with this item.

Basis of Payment: This work will be paid for at the contract unit price per each for COFFERDAM, at the location specified.

Seal coat concrete shall not be paid for separately but shall be included in this work.



### **Segmental Concrete Block Wall**

**Description.** This work shall consist of furnishing the design computations, shop plans, materials, equipment and labor to construct a Segmental Concrete Block Retaining Wall with a maximum height of 5 ft (1.5 m) as measured from the top of block elevation to the finished grade line at the wall face.

**General.** The wall shall consist of a leveling pad, pre-cast concrete blocks, select granular backfill and, if required by the design, soil reinforcement. The materials, fabrication, and construction of the wall components are subject to approval by the Engineer. The Engineer reserves the right to obtain random samples for material testing. The wall shall be designed and constructed according to the lines, grades, and dimensions shown on the contract plans and approved shop plans. Segmental Concrete Block Retaining Wall units shall be Allan Block as produced by a certified Allan Block manufacturer. The Contractor shall verify the product style, size, and shape to match the existing Allan Block units installed on the Baha'i property.

**Submittals.** The wall supplier shall submit product data (including color to match the existing Baha'i units), design computations and shop plans to the Engineer. The shop plans shall be sealed by an Illinois Licensed Professional Engineer and shall include all details, dimensions, quantities, and cross sections necessary to construct the wall and shall include, but not be limited to, the following items:

- (a) Plan, elevation, and cross section sheet(s) for each wall showing the following:
- (1) A plan view of the wall indicating the offsets from the construction centerline to the first course of blocks at all changes in horizontal alignment. These shall be calculated using the offsets to the front face of the block shown on the contract plans and the suppliers proposed wall batter. The plan view shall indicate bottom (and top course of block when battered), the excavation and select granular backfill limits as well as any soil reinforcing required by the design. The centerline of any drainage structure or pipe behind or passing through/under the wall shall also be shown.
  - (2) An elevation view of the wall, indicating the elevation and all steps in the top course of blocks along the length of the wall. The top of these blocks shall be at or above the theoretical top of block line shown on the contract plans. This view shall also show the steps and proposed top of leveling pad elevations as well as the finished grade line at the wall face specified on the contract plans. These leveling pad elevations shall be located at or below the theoretical top of leveling line shown on the contract plans. The location, size and length of any soil reinforcing connected to the blocks shall be indicated.
  - (3) Typical cross section(s) showing the limits of the select granular backfill, soil reinforcement if used in the design. The right-of-way limits shall be indicated as well as the proposed excavation, cut slopes, and the elevation relationship between existing ground conditions and proposed grades.

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

The initial submittal shall include 3 sets of prints of the detail shop plans, 1 set of calculations, and 3 complete units of each size, shape, and color to be installed. One set of plans will be returned to the Contractor with any corrections indicated. After approval, the Contractor shall furnish the Engineer with 8 sets of corrected plan prints for distribution. No work or ordering of materials for the structure shall be done by the Contractor until the submittal has been approved in writing by the Engineer.

Materials. The materials shall meet the following requirements:

- (a) Pre-cast Concrete Block: The block proposed for use shall be produced according to the Department's Policy Memorandum "Quality Control/ Quality Assurance Program for Precast Concrete Products", and shall satisfy the following:

Conform to the requirements of ASTM C 1372 except as follows:

- (1) Fly ash shall be according to Article 1010.02.

- (2) Ground granulated blast-furnace slag shall be according to Article 1010.05.
  - (3) Aggregate shall be according to Articles 1003.02 and 1004.02, with the exception of gradation. Chert gravel may be used based on past in-service satisfactory performance, in the environment in which the product was used.
  - (4) Water shall be according to Section 1002.
  - (5) Testing for freeze-thaw durability will not be required. However, unsatisfactory field performance as determined by the Department will be cause to prohibit the use of the block on Department projects.
- (b) Select Granular Backfill: The material behind the blocks and above a 1:1 slope extending upward from either the back of the bottom block or soil reinforcement (whichever is greater) shall consist of either a coarse aggregate according to Article 1004.05(a), or a fine aggregate according to the first sentence of Article 1003.04(a). The aggregate used shall also meet the following:

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

When a fine aggregate is selected, the rear of all block joints shall be covered by a non-woven needle punch geotextile filter material according to Article 1080.05 of the Standard Specifications and shall have a minimum permeability according to ASTM D 4491 of 0.008 cm/sec. All fabric overlaps shall be 6 in. (150 mm) and non-sewn. As an alternative to the geotextile, a coarse aggregate shall be placed against the back face of the blocks to create a minimum 12 in. (300 mm) wide continuous gradation filter to prevent the select fill material from passing through the block joints.

- (c) Leveling pad: The material shall be either Class SI concrete according to Article 1020.04 or compacted coarse aggregate according to Articles 1004.04, (a) and (b). The compacted coarse aggregate gradation shall be CA 6 or CA 10.
- (d) Soil Reinforcement: If soil reinforcement is required by the approved design, the Contractor shall submit a manufacturer's certification for the soil reinforcement properties which equals or exceeds those required in the design computations. The soil reinforcement shall be manufactured from high density polyethylene (HDPE) uniaxial or polypropylene biaxial resins or high tenacity polyester fibers with a PVC coating, stored between -29 and 60° C (-

20 and 140° F). The following standards shall be used in determining and demonstrating the soil reinforcement capacities.

ASTM D-638	Test Method for Tensile Properties of Plastic
ASTM D-1248	Specification for Polyethylene Plastics Molding and Extrusion Materials
ASTM D-4218	Test Method for Carbon Black Content in Polyethylene Compounds
ASTM D-5262	Test Method for Evaluating the Unconfined Tension Creep Behavior of Geosynthetics
GG1-Standard	Test Method for Geogrid Rib Tensile Strength
GG2-Standard	Test Method for Geogrid Junction Strength
GG4-Standard	Practice for Determination of the Long Term Design Strength of Geogrid
GG5-Standard	Practice for Evaluating Geogrid Pullout Behavior

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

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

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

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

The foundation material for the leveling pad and select granular backfill volume shall be graded to the design elevation and compacted according to Article 205.06, except the minimum required compaction shall be 95% of the standard laboratory density. Any foundation soils found to be unsuitable shall be removed and replaced as directed by the Engineer and shall be paid for according to Article 109.04.

The select granular backfill lift placement shall closely follow the erection of each course of blocks. All aggregate shall be swept from the top of the block prior to placing the next block lift.

If soil reinforcement is used, the select granular backfill material shall be leveled and compacted before placing and attaching the soil reinforcement to the blocks. The soil reinforcement shall be pulled taut, staked in place, and select fill placed from the rear face of the blocks outward. The lift thickness shall be the lesser of 10 in. (255 mm) loose measurement or the proposed block height.

The select granular backfill shall be compacted according to Article 205.06, except the minimum required compaction shall be 95% of the standard laboratory density. Compaction shall be achieved using a minimum of 3 passes of a lightweight mechanical tamper, roller or vibratory system. The top 12 in. (300 mm) of backfill shall be a cohesive, impervious material capable of supporting vegetation, unless other details are specified on the plans.

The blocks shall be maintained in position as successive lifts are compacted along the rear face of the block. Vertical, horizontal, and rotational alignment tolerances shall not exceed ½ in. (12 mm) when measured along a 10 ft (3 m) straight edge.

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

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

### **Retaining Wall Removal**

Description: This work shall consist of furnishing all labor, tools, and equipment necessary for the partial removal and disposal of the existing segmental block and timber retaining walls to the limits shown on the Plans or as directed by the Engineer. This work shall be completed in accordance with the applicable portions of Section 501 of the Standard Specifications, particularly Section 501.05 regarding partial removal of structures, and as noted herein.

The portion of the existing wall to be removed shall be removed in such a manner as to leave the portion to remain undamaged and in proper condition. Any damage to the portion of the remaining wall to remain shall be repaired by the Contractor at his/her expense.

After removal operations are complete, final end treatment and earth shaping shall be completed to the satisfaction of the Engineer.

This work shall also consist of removing portions of the existing private irrigation system that conflicts with the proposed improvements. The Baha'i Temple shall be contacted and coordinated with prior to the removal of any irrigation items. Existing sections of the system to remain in place shall be properly capped by a licensed irrigation contractor. The proposed irrigation system near the wall and driveway planters will be installed by the Baha'i Temple.

Two empty four inch sleeves are shown on the water main plans crossing the driveway at station 1076+82 right, to accommodate the proposed irrigation system by others.

Included in this item is the removal of the existing two-foot high post and chain fence located at the top of the existing timber wall and the existing raised planter on the west side of the driveway.

Method of Measurement: Retaining Wall Removal shall be measured for payment per foot.

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

Removal of the existing irrigation system, the two-foot high post and chain fence, and the raised planter on the west side of the driveway shall not be paid for separately but shall be included in this work.

#### **Plug Existing Sanitary Sewers**

Description: This work shall consist of all labor, materials, and equipment necessary to remove the abandoned sanitary sewer pipes that conflict with the installation of the soldier piles for the proposed retaining wall and to plug the existing portion to remain. Based on available information regarding the location of the pipe, the abandoned sanitary sewer pipes have been identified on the plans. The work associated with these known locations will not be considered an obstruction according to the special provision for "Drilled Soldier Pile Retaining Wall" but will be included in this work.

Plugging shall consist of sealing the ends of the pipe with Class SI concrete or brick and mortar to the satisfaction of the Engineer.

Method of Measurement: This work shall be measured for payment for each drilled shaft location that conflicts with the abandoned sanitary sewer pipe.

Basis of Payment: Removing the abandoned sanitary sewer pipe that conflicts with the installation of the soldier piles and plugging the existing portion to remain will be paid for at the contract unit price per each drilled shaft location for PLUG EXISTING SANITARY SEWERS.

**Gateway Monument Sign Complete**  
**Precast Concrete Panels**  
**Precast Concrete Caps**

**GENERAL**

The work under this item shall consist of the following providing all labor, materials, tools, and equipment as necessary to manufacture, deliver and install GATEWAY MONUMENT SIGN COMPLETE including:

1. Excavation and Granular Sub-Base
2. Concrete Foundation and Footing Cap
3. Fabrication, finishing and installation of Precast Concrete Pedestal Cladding
4. Fabrication, finishing and installation of Metal Monument Assembly, including integral translucent glazing panels.
5. Furnishing and installation of Lighting Units.

The work under this item shall consist of the following providing all labor, materials, tools, and equipment as necessary to manufacture, deliver and install PRECAST CONCRETE PANEL and PRECAST CONCRETE CAPS including:

1. Fabrication, finishing and installation of Precast Panels and Capss.

System Description:

1. General: Unless otherwise specifically approved in writing, furnish exact sections, weights, and kinds of material specified, using details and dimensions shown.
2. Not all connections are detailed; similar details apply to similar conditions, unless otherwise indicated. Contact the architect promptly to verify design of members or connections in any situation where design requirements are unclear.

Related Documents for this Section include Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections.

**PRECAST ARCHITECTURAL CONCRETE**

**DEFINITIONS**

- A. Precast Architectural Concrete: Concrete that is exposed to view on surfaces of the completed structure and that requires special concrete materials, formwork, placement, or finishes to obtain specified architectural appearance.

- B. Reveal: Projection of the coarse aggregate from the concrete mortar after exposure of aggregate.
- C. Gap-graded concrete: concrete formulated with a non-uniform gradation of aggregate that includes no intermediate-sized aggregate between the coarse and fine aggregate sizes. The volume of fine aggregate, cement and water is designed to be just enough to fill the voids between tightly packed coarse aggregate.

#### PERFORMANCE

- A. Provide materials and installation to match the color and texture of the historic concrete aggregate and matrix for Precast Wall Panels and Capstone.
- B. Acceptable Fabricators: The following listed firms or approved equals are considered to be acceptable manufacturers of precast concrete units for this project, provided that they comply with the requirements listed below. The use of any other manufacturer shall require written permission by the Architect.
  - 1. Architectural Cast Stone, West Chicago, IL (630) 377-4800
  - 2. Wausau Tile, Chicago, IL (773) 528-9230
- C. The selected Manufacturer shall have sufficient available production capacity to produce, transport, and deliver the specified precast concrete units without causing a delay in the work. The selected Manufacturer shall also provide a product quality control system in accordance with PCI MNL 116 and perform concrete and aggregate quality control testing using an approved, independent commercial testing laboratory. Submit test results to the Architect.

#### SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixes: For each concrete mix.
- C. Precast Concrete Shop Drawings: Detail fabrication and installation of precast architectural concrete units. Indicate member locations, plans, elevations, dimensions, shapes, cross sections, limits of each finish, and types of reinforcement, including special reinforcement.
  - 1. Detail loose and cast-in hardware, inserts, connections, and joints, including accessories.
  - 2. Indicate locations and details of anchorage devices to be embedded in other construction.



- D. Architectural Samples: For each concrete mix and type of finish indicated on exposed surfaces of precast architectural concrete units, illustrating full range of finish, color, and texture variations expected; approximately 12 by 16 by 2 inches.

#### QUALITY ASSURANCE

- A. Sample Precast Architectural Concrete Units: Before fabricating precast architectural concrete units, produce sample units to establish the approved range of selections made under sample Submittals. Produce a minimum of 3 sets of full-scale sample units, approximately 48 inches long by 48 inches high, to demonstrate the expected range of finish, color, and texture variations.
1. Locate units where indicated or, if not indicated, as directed by the Engineer.
  2. In presence of the Engineer, damage part of an exposed-face surface for each finish, color, and texture, and demonstrate materials and techniques proposed for repair of surface blemishes to match adjacent undamaged surfaces.
  3. Maintain sample units during construction in an undisturbed condition as a standard for judging the completed Work.
  4. Remove sample units when directed.
- B. Mockups: Before installing precast architectural concrete units, mockups will be built to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in the location and of the size indicated or, if not indicated, as directed by the Engineer.
  2. Notify the Engineer seven days in advance of dates and times when mockups will be constructed.
  3. Obtain the Engineer's approval of mockups before starting fabrication.
  4. In presence of the Engineer, damage part of an exposed face for each finish, color, and texture, and demonstrate materials and techniques proposed for repairs to match adjacent undamaged surfaces.
  5. Until construction is complete maintain mockups in an undisturbed condition as a standard for judging the completed Work.
  6. Remove mockups when directed.
  7. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Preinstallation Conference: Conduct a conference at the request of the Engineer.

## ENVIRONMENTAL CONDITIONS

- A. Perform all work under temperature and climatic conditions recommended by materials manufacturer, ACI recommendations and in accordance with the special conditions described herein. See "PART 3 PLANT EXECUTION" for special conditions.

## DELIVERY, STORAGE, AND HANDLING

- A. Storage areas shall be as directed by the Engineer.
- B. Handle panel shaped units at all times in a nearly vertical position. Never lay them flat. Precast members are a concrete product having very little tensile strength but considerable compressive strength; therefore, handle panels in compression as much as possible.
- C. When curing and storing flat panel shaped units the panels should be stored in a vertical position against "A" frames having a pair of vertical and horizontal supports that are centered on the panel and spaced apart a distance between 50 to 55 percent of the length of the panel. Protective blocks shall be laid horizontally under the panels and between each panel in such a way as to exactly line up with the "A" frame supports. Irregular spacing of the protective blocks horizontally or vertically will invariably cause warping and twisting, particularly in large panels. Panels must be stored in their original square, flat plane. Individual stair treads shall be stacked no more than three units high unless approved by the Engineer.
- D. When curing and storing Caps shaped units the units should be stored on horizontal supports that are centered on the unit and spaced apart a distance between 50 to 55 percent of the length of the unit. Protective material shall be laid horizontally under the units and, when stacking units, between each unit in such a way as to exactly line up with the supports for the unit above. Irregular horizontal spacing of the protective blocks will invariably cause warping and twisting, particularly in large units. Units must be stored in their original square, flat plane. Individual stair treads shall be stacked no more than three units high until full design strength is reached unless the Engineer approves otherwise.
- E. Acceptable protective material referred to above should be wood blocking with a layer of one-half inch thick extruded foam for under the units and hard white plastic panel pads and corner guards for the spacers between units.
- F. All stored units should be covered with suitable covers of canvas, heavy waterproof paper, plastic sheeting, etc., to prevent accumulation of dust, dirt or other staining material from contacting the panels.

- G. Lift and support units only at designated lifting and supporting points as shown on Shop Drawings.
- H. Deliver precast architectural concrete units to Project site in such quantities and at such times to ensure continuity of installation. Store units at Project site to prevent cracking, distorting, warping, staining, or other physical damage, and so markings are visible.
- I. Before unloading, check the condition of the units and if any damage has been sustained in transit, make proper notations to that effect on the bill of lading or delivery ticket.
- J. Carefully remove all bracing, packing, etc., protecting edges of the units during shipping. Corners and casts with returns of unusual lengths may be shipped with braces wired from loop to loop for greater protection in transit. Do not remove this bracing until just prior to installation. If belts are used in unloading, only one unit or component at a time shall be removed from the truck or car, and protective material must be used between belts and point of contact with units. Under no circumstances shall gangs of units or components be removed with one lifting unless stored on racks designed for such lifting.
- K. Provided the above care is used in handling and storage, minor broken corners may be patched provided the patches are acceptable to the Engineer. If unacceptable, the Engineer may require the responsible contractor to call in the manufacturer for patching. If still unacceptable, the units are to be replaced.
- L. Storage areas shall be as directed by the Engineer.

#### SEQUENCING

- A. Furnish anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.

#### PRODUCTS

#### GENERAL

- A. Products specified in this section are believed to have properties adequate for successful completion of the work. If the Contractor has found these materials to be unacceptable, or has had difficulty using these materials, the Contractor shall immediately inform the Engineer.

#### MOLD MATERIALS

- A. Molds: Provide molds of metal, plastic, wood or another material that is nonreactive with concrete and dimensionally stable to produce continuous and true precast concrete surfaces within fabrication tolerances and suitable for required finishes.

## REINFORCING MATERIALS

- A. Epoxy coating, General: Epoxy coating for new reinforcing bars and for welded wire mesh shall consist of a protective coating applied by electrostatic fluidized-bed method in accordance with the resin manufacturer's recommendations and these specifications.
1. The coated bars shall be free of slivers and defects. The coated bars shall meet the physical properties herein specified and may be inspected for approval at the coating plant.
  2. A certificate stating that all bars have been coated in accordance with the resin manufacturer's recommendations, these specifications, and the "Standard Specification for Epoxy-Coated Reinforcing Bars" (ASTM A775) shall be furnished with each shipment. This certification shall include for each bar size: the preheat temperatures, cure times, thickness checks, holidays detected, and bend test results.
    - a. Two copies shall be submitted to the Engineer prior to the installation of any of the reinforcing steel.
  3. Materials for repair of epoxy coating shall be compatible with the coating, inert in concrete, conforming to ASTM A775, and supplied by the epoxy resin manufacturer. The materials shall be suitable for repair of areas of epoxy coating that have been damaged or cut.
    - a. Repair materials shall be applied in accordance with the manufacturer's recommendations.
- B. Epoxy-Coated Reinforcing Bars:
1. Reinforcing steel bars shall be Grade 60 (60,000 psi yield strength) as defined in ASTM A615. All reinforcing to be used shall be epoxy-coated, conforming to ASTM A775.
- C. Epoxy-Coated-Steel Wire:
1. Tie wire shall be nylon or plastic-coated wire 16 gauge or heavier.
  2. Supplementary steel wires as indicated on the drawings shall be epoxy-coated, 4 gauge steel wire.
- D. Epoxy-Coated-Steel Welded

1. Welded wire mesh shall be as indicated on the structural drawings but not smaller than type 4 x 4 – W4.0 x W4.0 flat sheets, as designated by the Wire Reinforcement Institute. All welded wire fabric shall be 65,000 psi yield strength, as defined in ASTM A185. All welded wire fabric shall be epoxy-coated.

E. Form Retarder:

1. EXPOSE-IT!, Fister, Inc., 80 Mill Street, Roswell, GA 30075, telephone: (800) 339-9534.
2. Release 844 Form Releasing Agent, Grace Construction Products. Local Representative: Grayslake, IL (800) 444-6459.

#### STAINLESS-STEEL CONNECTION MATERIALS

- A. Stainless-Steel Plate: ASTM A 666, Type 304, of grade suitable for application.
- B. Stainless-Steel Bolts and Studs: ASTM F 593, alloy 304 or 316, hex-head bolts and studs; stainless-steel nuts; and flat, stainless-steel washers.

#### PRECAST CONCRETE WALL AND CAP MATERIALS

- A. Portland Cement: ASTM C 150, Type I, white, produced by Lehigh Cement
- B. Coarse Aggregates: ASTM C 33, hard, durable, clean, and free of material that reacts with cement or causes staining. Crushed and screened into a uniform gradation of size No. 4 x No. 8 (passing 1/4" screen and retained on No. 8 screen).
  1. **Amberlite Quartz:** crushed stone produced by Southern Aggregates, Staley, North Carolina 27355 and from Fister Quarry Group, 1150 Lyon Road, Batavia, Illinois 60510, phone 800-542-7393.
  2. **Liberty Quartz:** produced by Southern Aggregates, Staley, North Carolina 27355 and from Fister Quarry Group, 1150 Lyon Road, Batavia, Illinois 60510, phone 800-542-7393.
- C. Fine Aggregates: ASTM C 33, hard, durable, washed, clean, and free of material that reacts with cement or causes staining. Crushed and screened into a uniform gradation of size No. 40 by No. 60 (passing No. 30 screen, retained on No. 60 screen) from
  1. **Amberlite Quartz:** crushed stone produced by Southern Aggregates, Staley, North Carolina 27355 and from Fister Quarry Group, 1150 Lyon Road, Batavia, Illinois 60510, phone 800-542-7393.

- D. Pigments: Coloring Admixture, of the type specified for each Mixture Type: ASTM C 979, synthetic mineral-oxide pigments temperature stable, non-fading, and alkali resistant, as produced by Dynamic Color Solutions and distributed by Fister Quarries Group, 2777 Finley Road. Suite 2, Downers Grove, Illinois 60515 (phone 800-542-7393).
- E. Water: Potable; free from deleterious material that may affect color stability, setting, or strength of concrete and complying with chemical limits of PCI MNL 117.
- F. Air-Entraining Admixture: "Master Builders MB-AE 90" air entrainment agent produced by BASF Construction Chemicals, LLC, 23700 Chagrin Boulevard, Cleveland, Ohio 44122, tel: 800-628-9990, www.basf-admixtures.com.

Precast Concrete WALL AND CAP Mixes

- A. General: Mix designs to provide concrete with the following properties:
  - 1. Compressive Strength (28 Days): 4000 psi.
  - 2. Maximum Water-Cementitious Materials Ratio: less than 0.47 by weight based on oven dry aggregates.
  - 3. Air content: produce a minimum of 7 1/2 percent entrained air complying with PCL MNL 117.
    - a. The entrained air shall be well distributed in bubbles not greater than 1 mm.
- B. General: Limit water-soluble chloride ions to the maximum percentage by weight of cement permitted by ACI 318.
- C. Mixture: PEBBLE MIX ---- for retaining wall cladding elements
  - 1. Proportions: Cement : Fine Aggregate : Coarse Aggregate 1:1.2:2.9
  - 2. Material: Quantity per cubic yard
    - Potable Water (based upon oven dry aggregates): less than 304 lbs.
    - White Portland Cement: 647 lbs.
    - Fine Aggregate: Amberlite Quartz 751 lbs.
    - Coarse Aggregate: Amberlite Quartz 1,240 lbs.
    - Coarse Aggregate: Liberty Quartz 611 lbs.
    - Air-entraining Admixture: 38 ml.

Note: adjust dose to produce required properties in finished concrete.

  - Super plasticizer: 1,072 ml.

Note: adjust dose to produce required properties in finished concrete.

Pigment: #275 Indian Brown	68 oz.
Pigment: #2 Yellow	18 oz.

## MOLD FABRICATION

- A. Accurately construct molds mortar tight and of sufficient strength to withstand pressures due to concrete-placement operations and temperature changes. Maintain molds to provide completed precast architectural concrete units of shapes, lines, and dimensions indicated, within fabrication tolerances specified.

## PRECAST COMPONENT FABRICATION

- A. General: place and consolidate concrete into watertight formwork to produce tightly packed coarse aggregate at the surface of the formwork. Joints between pieces of forms or molds must be watertight which can be achieved with gaskets or by running and tooling a bead of molding plaster along the assembled joint after the retarder is dry. The concrete mix design is gap-graded for tight packing of the coarse aggregate; special attention and effort is required in placement and consolidation of the concrete mixture.
- B. Cast-in Anchors, Inserts, Plates, Angles, and Other Anchorage Hardware: Fabricate anchorage hardware with sufficient anchorage and embedment to comply with design requirements. Accurately position for attachment of loose hardware, and secure in place during precasting operations. Locate anchorage hardware where it does not affect position of main reinforcement or concrete placement.
- C. Cast-in reglets, slots, holes, and other accessories in precast architectural concrete units to receive cramps, dowels, reglets, waterstops, flashings, and other similar work as indicated.
- D. Reinforcement: Comply with recommendations in CRSI's "Manual of Standard Practice" and PCI MNL 117 for fabricating, placing, and supporting reinforcement.
  - 1. Clean reinforcement of materials that reduce or destroy the bond with concrete.
  - 2. Accurately position, support, and secure reinforcement against displacement during concrete-placement and consolidation operations. Completely conceal support devices to prevent exposure on finished surfaces.
  - 3. Place reinforcement to maintain at least a 1-inch minimum coverage or the minimum coverage designated on the structural drawings. Arrange, space, and securely tie bars and bar supports to rigidly hold reinforcement in position while

- placing concrete. Direct tie wire ends away from finished, exposed concrete surfaces.
4. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with tie wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
  - E. Reinforce precast architectural concrete units to resist handling, transportation, and installation stresses.
  - F. Before placing concrete, verify that preparation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
  - G. Mix concrete according to PCI MNL 117 and requirements in this Section. After concrete batching, no additional water may be added.
  - H. Place concrete in a continuous operation to prevent seams or planes of weakness from forming in precast concrete units. Comply with requirements in PCI MNL 117 for measuring, mixing, transporting, and placing concrete.
  - I. Thoroughly consolidate placed concrete to eliminate air voids and produce tightly packed coarse aggregate at the surface of the formwork. Consolidate placed concrete by internal and external vibration without dislocating or damaging reinforcement and built-in items. Use equipment and procedures complying with PCI MNL 117. Vibration techniques that disturb the uniformity of the aggregate dispersion are prohibited.
  - J. Comply with ACI 306.1 procedures for cold-weather concrete placement.
  - K. Comply with ACI 305R recommendations for hot-weather concrete placement.
  - L. Formwork may be removed after concrete is hard enough to not be damaged by form-removal operations and provided exposure of aggregate, curing and protection operations are initiated and maintained.
  - M. Schedule form removal at a time that will permit exposure of aggregate in concrete surface so that finished surface appearance matches approved sample panels.
  - N. As soon after casting as practicable, finish exposed-aggregate surfaces of precast concrete to match approved sample panels or mockups and as follows:
    1. Use hand rubbing, sandpaper or brushing procedures and water washing to expose aggregate and surrounding matrix surfaces after form removal. Brushes shall have plastic bristles or brass wire bristles. Take care to expose aggregate to a uniform reveal.



2. Keep surfaces damp to slow hardening of concrete surface before exposure of aggregate is completed.
  3. Rinse with water and soft bristle brushes to remove paste residue.
- O. After two days from the time of concrete placement, remove the moisture-retaining-cover and wash the concrete surfaces with a solution of one-part muriatic acid and ten-parts water to thoroughly clean the exposed aggregate. After washing with the acid solution, the concrete shall be washed with fresh clean water to remove all traces of the acid. Reinstall the moisture-retaining-cover and continue the curing operation.
- P. After seven days from the time of concrete placement, remove the moisture-retaining-cover and continue the curing operation with air curing.
- Q. After fourteen days and not more than twenty-one days from the time of concrete placement, inspect the concrete surfaces. If residue of cement paste remains on the surface then wash the concrete surfaces with a solution of one-part muriatic acid and ten-parts water to thoroughly clean the exposed aggregate. After washing with the acid solution, the concrete shall be washed with fresh clean water to remove all traces of the acid.
- R. Cure concrete, according to requirements in PCI MNL 117, by moisture retention without heat or by accelerated heat curing using low-pressure live steam or radiant heat and moisture.
- S. Identify pickup points of precast architectural concrete units and orientation in structure with permanent markings, complying with markings indicated on Shop Drawings. Imprint or permanently mark the casting date on each precast architectural concrete unit on a surface that will not show in finished structure.
- T. Discard precast architectural concrete units that are warped, cracked, broken, spalled, stained, or otherwise defective unless repairs are approved by the Engineer.
- U. Furnish loose steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes for securing precast architectural concrete units to supporting and adjacent construction.

#### FABRICATION TOLERANCES

- A. Fabricate precast architectural concrete units straight and true to size and shape with exposed edges and corners precise and true so each finished panel complies with PCI MNL 117 product tolerances as well as position tolerances for cast-in items.

## FINISHES

- A. Finish exposed-face surfaces of precast architectural concrete units to match approved sample panels or mockups and as follows:
  - 1. Retarded Finish: Use chemical release and retarding agents applied to concrete forms and washing and brushing procedures to expose aggregate and surrounding matrix surfaces after form removal.
- B. Finish exposed surfaces of precast architectural concrete units to match face-surface finish.
- C. Finish unexposed surfaces of precast architectural concrete units by float finish.

## PLANT QUALITY CONTROL

- A. Quality-Control Testing: Test and inspect precast concrete according to PCI MNL 117 requirements. Strength of precast concrete units will be considered deficient if units fail to comply with ACI 318 requirements.

## EXECUTION

### EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances, true and level bearing surfaces, and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Do not install precast concrete units until supporting concrete has attained minimum design compressive strength.

### INSTALLATION

- A. Furnish loose steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes for securing precast architectural concrete units to supporting and adjacent construction.
- B. Install clips, hangers, and other accessories required for connecting precast architectural concrete units to supporting members and backup materials.

- C. Install precast architectural concrete. Provide temporary supports and bracing as required to maintain position, stability, and alignment as units are being permanently connected.
1. Install bearing pads as precast concrete units are being erected.
  2. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
  3. Remove projecting hoisting devices and use sand-cement grout to fill voids within recessed hoisting devices flush with surface of concrete.
- D. Anchor precast architectural concrete units in position by bolting, grouting, or as otherwise indicated. Remove temporary shims, wedges, and spacers as soon as possible after anchoring and grouting are completed.
1. Repair damaged steel surfaces by cleaning and re-priming damaged painted surfaces.
- E. At bolted connections, use lock washers or other acceptable means to prevent loosening of nuts.
- F. Grouting Connections: Grout connections where required or indicated. Retain grout in place until hard enough to support itself. Pack spaces with stiff grout material, tamping until voids are completely filled. Place grout to finish smooth, level, and plumb with adjacent concrete surfaces. Tool joints as indicated on drawings. Keep grouted joints damp for not less than 24 hours after initial set. Promptly remove grout material from exposed surfaces before it affects finishes or hardens. All surfaces forming beds or other joints in precast components shall be cleaned of all dust, dirt and other foreign substances. Each component shall be set level and true to line with uniform joints. All necessary precautions shall be taken to protect precast members from being damaged after they have been installed. Wedges, spacers, or other appliances (which are likely to cause staining) used in setting components shall be removed from the joints as soon as practicable.
- G. Cleaning: The contractor shall provide adequate means to protect the facing of panels from staining, injury or other damage during handling and installation and until accepted by the Engineer. After the panels have been installed and caulked or pointed, the exposed faces may be cleaned down thoroughly with a commercial detergent, or a weak solution of sulfamic acid or grout residue cleaner (non-muriatic acid) and water using a brush to remove any foreign matter and/or stains. All trace of acid must be immediately removed by the free use of clear, fresh water and brush.

#### ERECTION TOLERANCES

- A. Install precast architectural concrete units level, plumb, square, true, and in alignment without exceeding the non-cumulative erection tolerances of PCI MNL 117, Appendix I.

#### FIELD QUALITY CONTROL

- A. Testing: The Engineer may engage a qualified independent testing and inspecting agency to perform field tests and inspections.
- B. Field connections using high-strength bolts will be subject to tests and inspections.
- C. Testing agency will report test results promptly and in writing to Contractor and Engineer.
- D. Remove and replace work that does not comply with specified requirements.

#### REPAIRS

- A. Repair exposed exterior surfaces of precast architectural concrete units to match color, texture, and uniformity of surrounding precast architectural concrete if permitted by the Engineer.
- B. Remove and replace damaged precast architectural concrete units if repairs do not comply with requirements.

#### CLEANING

- A. Clean exposed surfaces of precast concrete units after erection to remove markings, dirt, and stains.
  - 1. Wash and rinse according to precast concrete fabricator's written recommendations. Protect other work from staining or damage due to cleaning operations.
  - 2. Do not use cleaning materials or processes that could change the appearance of exposed concrete finish.

## GATEWAY MONUMENT SIGN COMPLETE

### GENERAL

- A. Acceptable Fabricators: The following listed firms or approved equals are considered to be acceptable manufacturers of metal components and associated materials and appurtenances for Gateway Monument Sign Complete for this project, provided that they comply with the requirements listed below. The use of any other manufacturer shall require written permission by the Architect.
1. Binzel Industries, Rolling Meadows, IL (847) 506-0003
  2. Duroweld Co. Inc, Lake Bluff, IL (847) 680-3064
- B. Steel Shop Drawings:
1. Complete drawings for structural steel, including information on location, type, and size of all connections, distinguishing between those made in the shop and those made in the field.
  2. Indicate weld lengths and sizes, using standard American Welding Society (AWS) welding symbols.
  3. Include setting drawings and templates for anchorages to be installed by others.
  4. Laser-cut steel profiles as shown in the drawings are available in electronic graphic file format from the architect, by request.

### PERFORMANCE REQUIREMENTS

Structural Performance of Gateway Monument Signs: Gateway Monument Signs shall be capable of withstanding the effects of loads and stresses within limits as follows:

Design of Gateway Monument Sign Complete to withstand a minimum 40lb uniform live load and 250lb point load applied to any point within the assembly with a factor of safety of 1.0 against sliding and overturning.

Delegated Design Submittal: Gateway Monument Sign Complete to comply with the design criteria noted above and design intent as shown in the drawings. The Contractor is to provide structural analysis data signed and sealed by a qualified professional engineer, licensed in the State of Illinois, responsible for their preparation.

### PRODUCTS

- A. Steel Materials:

For members which will be exposed in the finished work, provide only materials which are free of surface blemishes such as pitting, roller marks, rolled trade names, and surface roughness.

1. Structural Steel Members: ASTM A 36.
  2. Structural Tubing, Cold - Formed: ASTM A 500.
  3. Anchor Bolts: ASTM A307, Carbon Steel, Grade C.
- B. Steel Sheet: Electrolytic zinc-coated, ASTM A 591/A 591M, with steel sheet substrate complying with ASTM A 1008/A 1008M, commercial steel, exposed.
- C. Stainless Steel: ASTM A 666, Type 304.
- D. Miscellaneous Materials:
1. Welding Electrodes and Fluxes: AWS D1.1 Types as follows: ETOXX.
  2. Non-shrink Grout: Non-metallic, non-shrink, non-staining pre-packaged material requiring only the addition of water and complying with ASTM C 1107.
  3. Shop Primer: Rust-inhibitive, lead and chromate free, low VOC primer, complying with FS TT - P-664, or equivalent.
  4. Structural Anchors: For applications indicated to comply with certain design loads, provide torque-controlled expansion anchors fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

## FABRICATION

- A. Shop Assembly - General: Comply with requirements of AISC Specifications. Shop fabricate and assemble to maximum degree possible.
- B. Appearance: Cut, fit, and assemble units with exposed surfaces smooth, square, and free from cutting marks, shear distortion, burrs, and nicks.
- C. Tolerance: As specified in AISC Code, unless more stringent requirements are indicated on the drawings.
- D. Thermal Cutting: Perform all thermal cutting by machine. Plane thermally cut edges which are to be welded.
- E. Welds:

1. Comply with requirements of AWS Code for welding procedures and quality of welds, including appearance.
2. Built-up sections: Assemble components and weld using procedures which will maintain proper alignment of finished section.
3. Verify that weld sizes, fabrication sequence, and equipment to be employed will limit distortions to allowable tolerances. Surface bleed of back-side welding on exposed surfaces will not be acceptable.
4. Grind smooth exposed fillet welds 1/2 inch and larger.
5. Grind flush butt welds.
6. Dress all exposed welds.
7. Finishing: Accurately mill ends of columns and other members which must transmit load in bearing.

G. Holes In Steel Members:

1. Make all holes by means of cutting, drilling or punching at right angles to surface of metal. Do not make or enlarge holes by burning.
2. Provide holes in steel members are required to permit connection of work by others.

## FINISHING

General:

- A. A three coat Organic zinc rich primer/polyamide epoxy/aliphatic acrylic polyurethane paint system shall be used.
- B. In the shop, all structural steel designated to be painted shall be given one coat of organic zinc rich primer. All areas shop primed shall then be spot cleaned per SSPC-SP11 and spot primed with organic zinc rich primer. The structural steel shall then receive one full intermediate coat of polyamide epoxy and one full final coat of aliphatic acrylic polyurethane paint.
- C. Coating Dry Film Thickness (dft):
  - Organic Zinc Rich Primer: 65 microns (2.5 mils) min., 90 microns (3.5 mils) max.
  - Polyamide Epoxy Intermediate Coat: 100 microns (4.0 mils) min., 150 microns (6.0 mils) max.
  - Aliphatic Acrylic Polyurethane Top Coat: 50 microns (2.0 mils) min., 75 microns (3.0 mils) max.
  1. The total dry film thickness shall be between 215 and 315 microns (8.5 and 12.5 mils).
  2. The paint manufacturer's product data sheets shall be submitted to the Commissioner prior to start of work and the requirements as outlined in the data sheets shall be followed.

3. Written approval of color by Engineer must be obtained prior to ordering and application of paints and stains.
4. Application of the epoxy polyamide and coat will not be allowed when the steel and/or air temperature is expected to fall below 10° C (50° F.) within 24 hours of application.
5. Field cleaning and touch-up painting shall only be done between May 1 and October 31.

#### Acceptable Manufacturers

- A. Carboline Company, 350 Hanley Industrial Court, St. Louis, Missouri 63144-1599. Toll Free (800) 848-4645. Local phone (314) 644-1000. Fax (314) 644-4617 or ...
- B. Tnemec Company Incorporated, 6800 Corporate Drive, Kansas City, Missouri 64120-1372. Toll Free (800) 863-6321. Local phone (708) 387-0305. Fax (708) 387-7941 or approved equal.
  1. The appropriate Tnemec system may vary depending on exposure temperatures. Consult Tnemec Company Incorporated listed above for specific recommendations. Written approval by Engineer must be obtained prior to ordering and application of paints and stains.

#### Material Requirements For Qualified Product List

- A. The Organic Zinc Rich Primer shall be qualified as outlined below.

Prime Coat: Immediately after blasting and before rusting occurs (with twelve (12) hours maximum), apply one coat of a two-component moisture-cured urethane organic zinc-rich primer with 83% ULTRA PURE Zinc in the dried film, a maximum VOC of 2.7 pounds/gallon unthinned. A minimum volume solids 63%. Greenish/gray in color. Total dry film thickness of 2.5 to 3.5 mils. Paint must meet minimum performance standards that are itemized below, such as Tnemec Series 90-97 Tneme-Zinc.

- a. Adhesion (ASTM - D4541) - No less than 1,000 pounds per square inch to blasted steel.
- b. Cathodic Disbondment (ASTM G8 Method A) No rusting, blistering or delamination and no undercutting at holiday after 30 days exposure.
- c. Galvanic Protection - Average -878 millivolts.
- d. Immersion (ASTM D 870) No blistering, cracking, rusting or any signs of failure after 7 years immersion in potable water
- e. Salt Spray (ASTM - B117) - No blistering, cracking, rusting or delamination of film. No rust creepage at scribe after 10,900 hours exposure.



B. Polyamide Epoxy Intermediate Coat Properties

Intermediate Coat: Apply one coat of two-component polyamide epoxy with 1:1 mixing ratio and a maximum VOC of 3.1 pounds per gallon unthinned. Must have a minimum volume solids of 56% and be self-priming to steel. The color of this coat shall contrast with that of the finish coat. Total dry film thickness of 2.0 to 3.0 mils. Paint must meet minimum performance standards that are itemized below, such as Tnemec Series 66 Hi-Build Epoxoline.

- a. Abrasion (ASTM - D4060) - CS17 wheel, 1kg. load/1000 cycles with maximum of 115 mg. loss.
- b. Adhesion (ASTM - D4541) - No less than 1,000 pounds per square inch pull. Average of five tests.
- c. Pencil Hardness (ASTM - D3363) - Must pass 3H (Gouge).
- d. Humidity (ASTM - D4585) - No blistering, cracking, rusting or delamination of film after 4,500 hours exposure.
- e. Salt Spray (ASTM - B117) - No blistering, cracking, rusting or delamination of film. No more than 1/32" or .8 mm rust creepage at scribe after 1,500 hours exposure.
- f. Flame Spread (ASTM - E84) - Must meet the NFPA No. 101, class A requirements pertaining to Flame Spread and Smoke Density.

C. Aliphatic Acrylic Polyurethane properties

Finish Coat: Apply one complete coat of a two-component high build aliphatic acrylic polyurethane enamel (semi-gloss finish) with a maximum VOC of 3.2 pounds per gallon unthinned. Must be able to be applied to large areas by spray, brush or roller. Total dry film thickness of 2.0 to 3.0 mils. Paint must meet minimum performance standards that are itemized below, such as Tnemec Series 73 Endura-Shield. COLOR SHALL BE A CUSTOM COLOR AS PROVIDED BY THE ENGINEER PRIOR TO CONSTRUCTION.

- a. Abrasion (ASTM - D4060) - CS17 Wheel, 1kg. load/1000 cycles with a maximum of 96 mg. loss.
- b. Adhesion (ASTM - D4541) - No less than 1,000 pounds per square inch pull. Average of three tests.
- c. Humidity (ASTM - D4585) - No blistering, cracking or delamination of film after 600 hours exposure.
- d. QUV (ASTM - G 53) - FS-40 bulbs, 4 hours light, 4 hours dark. No blistering cracking or chalking. Less than 4.0 MacAdam units color change after 1,500 hours exposure.
- e. Salt Spray (ASTM - B117) - No blistering, cracking or delamination of film. No more than 1/16" or 1.6 mm rust creepage at scribe after 3,000 hours exposure.

D. Workability - The paints shall be easily applied by conventional and airless spray to smooth vertical surfaces at a minimum dry film thickness of 75 microns (3 mils) per coat without runs, sags, or other film defects. When application is made by brush or roller, multiple coats will be permitted to achieve 75 microns (3 mils) dry film thickness and uniformity of appearance.

E. Toxicity - The paints shall not contain more than trace amounts of lead, hexavalent chromium, cadmium, mercury, or other toxic heavy metals.

F. Flash Point - The flash point of the coatings shall be greater than 65° C (149° F.) as determined by a Pensky-Martens Closed Cup Tester according to ASTM D 93.

G. Shelf Life - The paints shall show no curdling, gelling, gassing, or an increase in viscosity of more than 10 KU after 1 year from the date of manufacture when packaged in tightly covered unopened containers and stored at temperatures between 10° C and 32° C (50° F - 90° F.).

H. Volume Solids - The coatings shall not be less than 32% solids by volume.

I. Odor - Freshly opened containers of the paints shall not exhibit any rancid, putrid, or other objectionable odors.

J. Drying Time - The paints shall set to touch within 4 hours and dry through within 24 hours when applied at 250 microns (10 mils) wet film thickness and tested according to ASTM D 1640.

K. Color and Hiding Power - THE FINISH COATS SHALL BE A CUSTOM COLOR AS PROVIDED BY THE ENGINEER PRIOR TO CONSTRUCTION. The color tolerance shall not exceed 10 Hunter Delta E Units for the primer and 3.0 Hunter Delta E Units for the finish coats. Color difference shall be measured by instrumental comparison of the designated Munsell standard to a minimum dry film thickness of 75 microns (3 mils) of sample coating produced on a test panel according to ASTM D 823, Practice E, Hand-Held, Blade Film Application. The contrast ratio of the finish coats at 50 microns (2 mils) dry film thickness shall not be less than 0.99 when tested according to ASTM D 2805. Color measurements shall be determined on a spectrophotometer with 45° circumferential/0° geometry, illuminant C, and 2° observer angle. The spectrophotometer shall measure the visible spectrum from 380 - 720 nanometers with a wavelength interval and spectral bandpass of 10 nanometers.

L. Gloss - The 60° specular gloss of the finish coats shall not be less than 65 when measured according to ASTM D 523.

M. Color and Gloss Retention of Finish Coats - A 250 micron (10 mil) wet film of finish coat shall be applied to a 300 mm x 100 mm (12 inch x 4 inch) aluminum alloy panel prepared according to ASTM D 1730 Type A, Method 1 Solvent Cleaning. Allow to air-dry for seven days and then measure the 60° specular gloss and color. Subject the coated panel

for 300 hours to accelerated weathering using the light and water exposure apparatus (fluorescent UV - condensation type) as specified in ASTM G 53 (equipped with UVB-313 lamps). The cycle shall consist of 8 hours UV exposure at 60° C (140° F.) followed by 4 hours of condensation at 40° C (104°F.). After exposure, rinse the panel with clean water, allow to dry at room temperature for one hour, and again measure the 60 degree specular gloss and color. The panel shall not show a color change of more than 3 Hunter Delta E Units and the 60° specular gloss shall not be less than 40.

#### Qualification Samples and Tests

- A. The manufacturer shall supply to the Engineer test information, duplicate samples of the organic zinc rich, polyamide epoxy and aliphatic acrylic polyurethane paints for evaluation. Testing shall be required for each finish coat color the manufacturer proposes to supply. The information supplied shall state lot tested, manufacturer's name, product name, and date of manufacture. New test results and samples for testing by the manufacturer shall be submitted any time the manufacturing process or paint formulation is changed. All costs of testing (other than tests conducted by the department) shall be borne by the manufacturer.

#### Acceptance Samples and Certification

- A. A 1 liter (1 quart) sample of each lot of paint produced for use on state or local agency projects shall be submitted to the department for testing, together with a manufacturer's certification. The certification shall state that the formulation for the lot represented is essentially identical to that used for qualification testing. The organic zinc rich, polyamide epoxy and aliphatic acrylic polyurethane paints shall not be used until tests are completed and they have met the requirements as set forth herein.

#### TRANSLUCENT GLAZING

Tempered float glass shall comply with ASTM C 1048, Type 1, Class 1 (clear). Laminated glass to comply with ASTM C1172. Glass shall be annealed and tempered as required by codes and as required to meet thermal stresses and wind loads.

Comply with recommendations and requirements of the "Glazing Manual" and "Sealant Manual" published by the Flat Glass Marketing Association. Show evidence that the adhesive, sealants and primers meet or exceed VOC content limits of SCAQMD.

Manufacturer's Data, Glass: Submit 2 copies of manufacturer's specifications and installation instructions for type of glass specified. Include test data substantiating that glass complies with specifications. Indicate by copy of transmittal that glazier has received copy of handling and glazing instructions.

Monolithic Laminated Glass: Laminated glass products to be fabricated in autoclave with heat, plus pressure, free of foreign substances and air pockets. Interlayer material: Polyvinyl Butyral sheets.

Laminated Vision Lite Performance Characteristics:

Laminated Lite: ¼" Laminate – 1/8" Clear; 0.030" PVB; 1/8" Clear.

Thermal:

1. Winter U-factor/U-Value (Btu/hr-ft<sup>2</sup>-F°): 1.00
2. Summer U-Factor/U-Value (Btu/hr-ft<sup>2</sup>-F°): 0.90
3. Solar Heat Gain Coefficient: 0.67
4. Shading Coefficient: 0.77
5. Relative Heat Gain: 167
6. Light to Solar Gain: 0.97

Optical:

1. Visible Light Transmission: 65%
2. Visible Light Reflectance (outside): 14%
3. Visible Light Reflectance (inside): 14%
4. Total Solar Transmittance: 57%
5. Total Solar Reflectance (outside) 11%
6. Ultraviolet Transmittance: <1%

Samples: Submit to Engineer samples of each type of glass, glazing sealer and gasket.

1. Provide two (2) 12 inches × 12 inches samples of ¼" laminated, tempered, glass with translucent interlayer.

Compatibility and Adhesion Test Report: Submit statement from sealer manufacturer indicating that glass and glazing materials have been tested for compatibility and adhesion with glazing sealers and interpreting test results relating to material performance, including recommendations for primers and substrate preparation needed to obtain adhesion.

Manufacturer's Special Project Warranty on Insulating Glass: Provide written warranty signed by manufacturer of insulating glass agreeing to furnish replacements for those insulating glass units developing manufacturing defects, with the F.O.B. point of manufacture, freight allowed project site, within the specified warranty period indicated below. Manufacturing defects are defined as failure of hermetic seal of air

space beyond that due to glass breakage, as evidenced by intrusion of dirt or moisture, internal condensation or fogging, deterioration of protected internal glass coatings, if any, and other visual indications of seal failure or performance, provided that the manufacturer's instructions for handling, installing, protecting and maintenance of units have been complied with during the warranty period.

Provide glass and glazing that has been produced, fabricated and installed to withstand normal thermal movement, wind loading, and impact loading (where applicable), without failure including loss or breakage of glass, failure of sealers or gaskets to remain watertight and airtight, deterioration of glass and glazing materials and other defects in the work.

1. Normal thermal movement is defined as that resulting from an ambient temperature range of 120 degrees F and from a consequent temperature range within glass and glass framing members of 180 degrees F.

Manufacturers of Glass:

- a. Guardian Industries Corp.
- b. Saint-Gobain/Euroglass.
- c. Oldcastle Glass.

Tempered Glass: Heat treated to 4 - 5 times annealed strength, 1/4 inch thick, unless shown otherwise. Provide samples of 25%, 50% and 75% PVB translucent interlayer for review by the Engineer.

1. Tempering shall be by the horizontal process. Roller distortion, if any shall be in the horizontal direction as installed in the work, as determined by the Engineer. Do not exceed maximum warpage in either face of each piece, in any direction, as listed in the FGMA standards, ASTM C 1048, and manufacturer's printed literature.
2. Cutting of Heat-Treated Glass: Prior to heat treating, cut glass to required sizes as determined by accurate measurement of openings to be glazed, making allowance for required edge clearances. Cut and process edges in accordance with glass manufacture's recommendations. Do not cut the glass nor treat the edges except at glass manufacturer's fabrication plant.

Glazing Sealers:

1. General: Provide color of exposed sealer / compound indicated or if not otherwise indicated, as selected by Engineer from manufacturer's standard colors. Comply with manufacturer's recommendations for selection of hardness, depending upon the location of each application, and performance requirements as indicated. Select materials, and variations or modifications carefully for compatibility with surfaces contacted in the installation.

2. Glazing Tape: Pre-formed butyl tape, NAAMM SS-1B-68, 10 - 15 durometer hardness, paper release, color as selected by DSE, thickness and depth in accordance with FGMA details.
3. Elastic Glazing Compound: Shall be DAP Inc.'s 1012 glazing compound, or Pecora Chemical Corp.'s M-242.
4. One-Part Silicone Glazing Sealer: Elastomeric sealer complying with FS TT-S-001543, Class A, non-sag. Provide acid type recommended by manufacturer where only non-porous bond surfaces are contacted; provide non-acid type recommended by manufacturer where one or more porous bond surfaces are contacted.

Obtain sizes from shop drawings or by field measurement. Cut glass to fit each opening with minimum edge clearance and bite on glass as recommended by glass manufacturer. Do not nip glass edges.

1. When glass will be precut to sizes obtained from shop drawings, take field measurements of each openings, before glazing, to verify adequate bite on the glass and minimum edge clearance. Openings which do not fall within the tolerances for which precut has been sized, shall be glazed only with glass specifically cut to fit such openings.

Clean surfaces to receive glazing materials of obstructions and deleterious substances which might impair the work. Remove protective coating which might fail in adhesion or interfere with bond of sealers. Comply with manufacturer's instructions for final wiping of surfaces immediately before application of primer and glazing compounds or tapes. Wipe metal surfaces with zylol or toluol.

Prime surfaces to receive glazing compounds in accordance with manufacturer's recommendations, using recommended primers.

The installation of each light of glass shall be watertight and airtight and capable of withstanding temperature changes, wind loading and impact from operation of removable laser-cut panels, without failure of any kind including loss or breakage of glass, failure to seal, exudation of sealer and excessive deterioration of glazing materials. Wet seal exterior of glass units in framing. Glass shall be handled and glazed carefully to prevent edge damage. A "rolling block" shall be temporarily fitted to the corner when used by glazier to rotate the unit. The "rolling block" minimizes the chances of damaging the corner of the unit by distributing the weight at the corner. Care shall be taken not to impact the metal framing or corrode the unit during installation.

Provide for minimum bite on the glass, minimum edge clearance and adequate sealer thickness, with reasonable tolerance. Be responsible for the correct glass size for each opening, within the tolerances and dimensions established.

1. Provide for a minimum edge clearance of 1/4 inch. The nominal bite on the glass shall be in accordance with the glass manufacturer's recommendations.

Comply with "Glazing Manual" by Flat Glass Marketing Association, except as shown and specified otherwise, and except as specifically recommended otherwise by the manufacturers of the glass and glazing materials.

Locate setting blocks at sill one quarter in from each end of the glass, unless otherwise recommended by the glass manufacturer. Use blocks of proper size to support the glass in accordance with manufacturer's recommendations.

1. Glass should be set on 2 identical setting blocks (neoprene or E.P.D.M.). Setting blocks shall be centered at 1/4 points, and never less than 6 inches from the edges of the insulating unit to the end of the setting block. Setting blocks shall always be equidistant from the centerline of the glass.

Force sealers into channel to eliminate voids and to insure complete "wetting" or bond of sealer to glass and channel surfaces.

Tool exposed surfaces of glazing liquids and compounds to provide a substantial "wash" away from the glass. Install pressurized tapes and gaskets to protrude slightly out of the channel to eliminate dirt and moisture pockets.

Clean and trim excess glazing materials from the glass and stops or frames promptly after installation and eliminate stains and discoloration.

The compressive pressure on the glass face should be a minimum of 4 pounds per lineal inch of edge to provide some assurance of an adequate seal. The pressure on the glass surface should not exceed 10 pounds per lineal inch.

The sealer depth shall be a minimum of 1/4 inch total to provide a watershed.

Glazing materials shall be resilient, non-hardening and elastomeric sealers, tapes, or elastomeric gaskets. Oil-based glazing and putty compounds shall not be used. Alternate glazing sealers require Architect's written approval and may be suitable, but verify with the sealer manufacturer and glass manufacturer for compatibility of the sealers before use on the project.

## LIGHT FIXTURE

Provide (1) linear LED light fixture and associated ballast per Gateway Monument Sign as manufactured by IO Lighting (Model: Line 1.5), 370 Corporate Woods Pkwy, Vernon Hills, IL (847)735-7000. or approved equal. Additional acceptable Manufacturer for LED light fixture: Illumivision, Edmonton, Alberta (888) 705-1028.

## EXECUTION

- A. Verification of Conditions: Examine areas of conditions for erection of structural steel and verify that the work may properly proceed. Do not commence erection of structural

steel until unsatisfactory conditions have been corrected or fabricated steel components have been adjusted with the architect's agreement.

- B. Preparation and Temporary Support: Provided temporary guys, braces, falsework, cribbing, or other required to secure the steel framing against loads equal in intensity to design loads. Remove such temporary support only when permanent connections have been made and the steel framing is fully capable of supporting design loads, including any temporary construction loads.
- C. Erection: Erect structural steel in compliance with AISC Code and Specifications.
- D. Assembly:
  - 1. Set structural members accurately to locations and elevations indicated, within tolerances established in AISC Code, before making final connections.
  - 2. Do not use thermal cutting to correct fabrication errors on any major structural member.
  - 3. Thermal cutting of secondary members may be permitted by the architect upon request, but only when members involved are not loaded.
  - 4. Columns and Bearing Surfaces:
    - a. Clean bearing and contact surfaces before assembly. Slightly roughen concrete and masonry surfaces to improve bond.
    - b. Set base and bearing plates accurately, using metal wedges, shims, or setting nuts as required.
    - c. After tightening anchor bolts and ensuring that structure is plumb, grout solidly between plates and bearing surfaces. Comply with manufacturer's instructions for non-shrink grout.
  - 5. Bolting:
    - a. Carbon steel bolts: Use only for temporary bracing during erection, unless otherwise specifically permitted by contract documents.
  - 6. Install light fixture in steel monument after erection and verify proper operation.
  - 7. Install laser-cut, back-glazed panels with stainless steel, tamperproof fasteners.

Field Quality Control:

Testing and Inspection:

- 1. Field-bolted connections: Comply with testing and verification procedures in AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".



METHOD OF MEASUREMENT.

1. GATEWAY MONUMENT SIGN COMPLETE will be measured for payment on a per EACH basis completely installed.
2. GATEWAY MONUMENT SIGN COMPLETE will consist of all precast concrete pedestal cladding, ornamental pylon metal work, translucent glazing and light fixture necessary to complete each gateway identifier as indicated on the drawings and approved shop drawings including all reinforcements, anchoring devices, embedded items, fabrication, delivery, installation, cleanup and finishing.
3. Granular sub-base, excavation, concrete footing, and electrical conduit and connection shall be considered incidental to the unit price for GATEWAY MONUMENT SIGN COMPLETE and no separate measurement shall be made.
4. PRECAST CONCRETE PANEL shall be measured for payment per SQUARE FACE FEET completely installed.
5. PRECAST CONCRETE CAPS will be measured for payment on a per EACH basis completely installed.

BASIS OF PAYMENT

1. GATEWAY MONUMENT SIGN COMPLETE shall be paid for at the contract unit price per EACH completely fabricated and installed.
2. Unit price for GATEWAY MONUMENT SIGN COMPLETE shall include all manufacturing, delivery, off-loading, temporary storage, installation, and all equipment, labor, and materials as shown on the drawings, as specified herein, and as necessary to complete this work for each gateway monument sign. Granular sub-base, concrete footing, and electrical conduit and connection, as well as the supply and installation of dowels, anchor devices, embedded items shown on the drawings and other needed appurtenances shall be considered incidental to these items and no separate payment shall be made.
3. PRECAST CONCRETE PANEL shall be paid for at the contract unit price per SQUARE FACE FEET completely fabricated and installed. The unit price shall include all manufacturing, delivery, off-loading, temporary storage, installation, and all equipment, labor, and materials as shown on the drawings, as specified herein, and as necessary to complete this work.
4. PRECAST CONCRETE CAPS shall be paid for at the contract unit price per EACH completely fabricated and installed. The unit price shall include all manufacturing, delivery, off-loading, temporary storage, installation, and all equipment, labor, and materials as shown on the drawings, as specified herein, and as necessary to complete this work.

### **Entrance Sign**

Contractor shall provide all equipment and materials, and do all work necessary to construct the entry features as indicated on the plans and as specified, including, but not limited to, the following:

1. Excavation for entry feature footings.
2. Construction of footings and core walls for entry features.
3. Fabrication and installation of limestone wall facing, trim and cap.
4. Cleaning of entry features.

#### Related Work:

1. Drawings and general provisions of Contract, including General and supplementary Conditions and all other Divisions of the Project Manual, apply to Section.

#### Examination and Acceptance of Work in Place:

1. Examine work in place on which this work is dependent. Defects or incomplete construction, which may influence completion and performance of this work, shall be corrected and completed by the trades involved prior to starting of the work. Starting of this work shall be an indication that the work in place is acceptable for completion of the work specified.

#### Reference Specification:

1. This work shall comply with the specifications of the Indiana Limestone Institute of America, Inc., as contained in the "INDIANA LIMESTONE HANDBOOK" (Latest Edition), unless otherwise specified.

#### Delivery and Storage of Materials:

1. Shipping and handling of limestone, including storage at the site, shall comply with the reference specifications.
2. Stone shall be stored clear of the ground on non-staining skids (cypress, white pine, poplar, or yellow pine without an excessive amount of resin). Chemically treated wood shall not be used. Do not use chestnut, walnut oak, certain firs and other woods containing tannin.
3. Stone shall be covered with waterproof paper, clean canvas or polyethylene to protect against disfiguring elements.
4. Deliver mortar materials to the project site in their original unopened containers bearing label identifying manufacturer's name and brand, and store under cover in a dry place to prevent absorption of water and intrusion of foreign matter.
5. Store masonry units off the ground in a dry location, covered and protected from the elements, including rain, snow and ice and from damage.

6. Units shall be free from soil, ice and frost when erected.
7. Protect reinforcing, ties and anchors from contact with soil. Remove rust and other coatings which will interfere with bond.

Temperature Conditions:

1. Limestone set with mortar shall not be set when the ambient temperature is below 40 degrees F., unless approved by the Owner's Representative. When the Owner's Representative approves of stone setting below 40 degrees F., International Masonry Industry All-Weather Council recommendations for setting from 40 degrees to 20 degrees F. shall be followed, except that no additives shall be used in the setting mortar. In temperatures below 20 degrees F., all work shall be done in heated enclosures.

Protection:

1. Protect this work and adjacent work and materials against damage during progress of the work until completion of the project.

Submittals:

1. Submittals shall be in accordance with the General Conditions.
2. Submit shop drawings showing layout and details of fabrication and installation, including dimensions, sections, profiles, finishes for exposed surfaces, jointing, anchorage devices, and setting numbers.
3. Submit three samples of limestone, not less than 12" x 12" size showing extreme range of color, texture and finish.
4. Submit sample of limestone with incised letter "R" and "O" in required size for review and approval by the Owner prior to fabrication of stone sign.

Sample Wall Construction:

1. Contractor shall construct a sample of the wall on-site to be used for establishing patterns, proportions and installation techniques. The wall shall have a minimum of three (3') feet in length and shall have finished corners.

Products:

1. Limestone
  - A. Limestone veneer and caps shall be Fon-du-lac limestone from Wisconsin.
  - B. Color, texture, and finish shall be within the range of approved samples.
2. Anchors
  - A. Anchors, dowels and other erection hardware shall be stainless steel, Type 302 or 304 and shall be furnished by the limestone fabricator.
  - B. Inserts for anchoring to structural steel or masonry backup shall have two-way adjustment.

3. Mortar Materials
  - A. Setting Mortar
    - i. Setting mortar shall be composed of one part non-staining cement, one part hydrated lime and six parts sand.
  - B. Pointing mortar shall be of same composition as setting mortar except that cement and sand used will be such that mortar color will match Medusa Portland Cement Company, "Brick Set" custom color. Mortar colors shall be lime-proof and alkali-proof mineral oxides, but no more coloring than 15 percent of cement weight shall be used. Sand shall pass a number 16 sieve.
  - C. Non-staining cement shall be waterproof cement as manufactured by Universal Atlas Cement Division of United States Steel Corporation, or Medusa Portland Cement Company, complying with ASTM C91.
  - D. Sand shall be clean, sharp and non-staining, and comply with ASTM C144.
  - E. Water shall be clean and non-alkaline.
  - F. Lime shall be hydrated lime, Type S, complying with ASTM C207.
4. Concrete
  - A. Concrete and reinforcements for foundations shall be Class SI concrete in accordance with Standard Specifications for Road and Bridge Construction, Latest Edition.
5. Concrete Masonry Units
  - A. Concrete masonry units shall be 8 x 8 x 16 inch standard concrete masonry units.

Execution:

1. General
  - A. Contractor shall layout entry feature for review by the Owner prior to commencement of construction activities.
2. Foundation Work
  - A. Foundations for Entry Feature shall be constructed as indicated on the plans.
  - B. Forms shall be wood and constructed to properly form concrete footings without bowing, twisting or shifting out of position.
3. Masonry Workmanship

- A. Fabrication, including variation in dimension, flatness tolerance, and incidental cutting and drilling, shall comply with the reference specifications.
  - B. Fabricate limestone in accordance with approved shop drawings.
  - C. Erection of masonry shall be in accordance with the BIA Guide Specification, unless otherwise specified.
  - D. Lay masonry plumb, true to line, with level courses and joints of uniform width and in thickness and pattern as directed.
  - E. Adjust each unit to its final position in the wall while the mortar is still soft and plastic. Any unit which is disturbed after mortar has stiffened shall be removed and not re-laid. Avoid over-plumbing and pounding of corners and jambs to fit.
  - F. Build chases as indicated or as required to accommodate pipes, ducts, conduits or other work provided under other sections. Keep chases and raked out joints free of mortar and debris.
  - G. Cutting of masonry units shall be done by masonry mechanics with masonry saws.
  - H. Where fresh masonry joins masonry that is partially set or totally set, the contact surface of the set masonry shall be cleaned and lightly wetted. Remove loose mortar prior to continuation of the placement of new masonry.
  - I. Finished surface shall not deviate from required line or plane more than 1/8 inch in any 10-foot dimension.
  - J. Lay each horizontal course complete unless stopping off is required for construction purposes. Stopping off shall be done only by racking back 1/2 brick length in each course. Tothing, or projecting end stretchers of alternate courses, will not be permitted, except upon written approval by the Owner's Representative.
  - K. Exposed joints shall be 3/8 inch thick, tooled with round jointer except where indicated otherwise. Joints below grade shall be trowel-pointed and all there joints not tooled shall be flush cut. All holes in the mortar shall be repointed.
  - L. Lay masonry units with completely filled mortar joints. Completely fill vertical longitudinal joints except in cavity walls.
4. Built-in-Work
- A. Solidly fill spaces around built-in items with mortar. Rake out joint between frame and masonry for caulking, unless otherwise indicated.

- B. Build in items required to be embedded in masonry in a manner to avoid cutting and patching.
5. Bonding
- A. Bond pattern for concrete masonry shall be running center bond, unless otherwise indicated or specified. Bond pattern for facing brick shall be as indicated.
6. Anchorage of Facing
- B. Anchor veneer facing to backing, except in cavity walls, with anchors staggered in alternate courses, at maximum spacing of 16 inches vertically and 24 inches horizontally. Provide additional ties around perimeter of openings at 36-inch maximum spacing and within 12 inches of opening.
7. Limestone Veneer Beds and Joints
- A. Unless otherwise indicated, beds and joints shall be 3/8 inch with a tolerance of plus-or-minus 1/16 inch.
  - B. Beds and sawn joints shall be cut or sawn full square back from the face. Jointing shall be as indicated. Stones resting on structural work shall have beds shaped to fit the supports as required. Exposed arrises shall be slightly blunted.
8. Limestone – Backs of Pieces
- A. Backs of pieces shall be sawn or roughly dressed to approximately true planes. Maximum variation in thickness from that indicated shall not exceed 3/8 inch on pieces less than three inches thick or 1/2 inch on thicker pieces. Remove rust stains and iron particles from sawn backs.
  - B. Where shown on approved shop drawings, pieces shall be backed off to clear structural members or other obstructions.
  - C. Mark setting number on the back or bottom of each piece with non-staining paint.
9. Cutting for Dowels, Anchors, Cramps, and Lewis Holes
- A. Holes and sinkages shall be cut in stones for anchors, cramps, dowels, and the like, per industry standard practices, and the shop drawings.
  - B. Stones that cannot be handled manually shall be provided with either lewis pin holes or a clamp hole. Stones under 3-3/4 inch thickness shall not have lewis holes.
  - C. Size and location of the clamp hole shall be furnished to the stone supplier in ample time for the stone supplier to drill the required hole during the course of normal fabrication, when possible.
  - D. No holes for handling devices shall be provided in exposed surfaces.

10. Cutting and Drilling for Other Trades
  - A. Miscellaneous cutting and drilling of stone necessary to accommodate other trades will be done by the stone fabricator when necessary information is furnished in time to be shown on his shop drawings and details, and when work can be executed before shipment. Cutting and fitting, due to job site conditions shall be done by stone setting contractor.
11. Setting Limestone
  - A. Competent stone setters shall set limestone accurately in accordance with approved setting drawings.
  - B. Stone work shall be set with setting mortar, joints raked and filled with pointing mortar except at cap joints as indicated and where expansion or control joints are indicated. Expansion and control joints and cap joints as indicated shall be left open to accept sealant with backer rods.
  - C. Furnish and insert dowels and anchors in holes provided in limestone, and fill with mortar, except do not fill holes for dowels at joints filled with joint filler.
  - D. When necessary, before setting in the wall, stones shall be thoroughly cleaned on exposed surfaces by washing with brush and soap powder, followed by a thorough drenching with clear water.
  - E. Where set with mortar, stones not thoroughly wet shall be drenched with clear water just prior to setting.
  - F. Where set with mortar, stones shall be set in full bed of mortar with vertical joints slushed full. Completely fill anchor, dowel and similar holes. Rake out mortar to one inch depth and point later with pointing mortar. After pointing mortar has achieved its initial set, tool joints to a slight concave profile.
  - G. Lead or plastic pads shall be placed under stones in same thickness as joints, and in sufficient quantity to avoid squeezing mortar out. Stones shall not be set until mortar in courses below has hardened sufficiently to avoid squeezing.
  - H. Where limestone is placed adjacent to steel (other than stainless steel), concrete or masonry, waterproof either the contracting surface of the stone or of the adjacent material with one of the following materials:
    - i. Asphalt emulsion damp-proofing.
    - ii. Cement-base masonry waterproofing.
    - iii. Any non-staining masonry waterproofing.
  - I. Furnish and install all required stone support and anchorage devices on the structural steel framework provided for exterior limestone.

12. Weep Holes
  - J. Provide weep holes in stone occurring at bottom of cavity and in first course above flashing through cavity. Weep holes shall be located at each head joint and kept free of mortar droppings. After wall is completed, clean out weep holes, taking care not to puncture thru-wall flashing and making sure that there is no obstruction to the flow of water.
13. Patching
  - K. At the discretion of the Owner's Representative, minor patching of limestone work will be permitted where patching will be permanent and will not detract from the appearance of the work. Major patching will not be permitted.
14. Cleaning
  - L. Clean stone with clean water and stiff brushes. Cleaners that might have adverse effects on surface of limestone or other surfaces shall not be used.
  - M. Debris and excavated soils shall be removed from the site and legally disposed of.

Method of Measurement:

1. ENTRANCE SIGN shall be measured in place per LUMP SUM completed entry feature including the following:
  - A. Excavation for entry feature footings.
  - B. Construction of footings and core walls for entry features.
  - C. Fabrication and installation of limestone wall facing, trim and cap.
  - D. Cleaning of entry features.
2. Each entry feature on the North and South side of the Gilson Park Entrance at Michigan Avenue will be measured and paid for separately.

Basis of Payment:

1. ENTRANCE SIGN will be paid for at the contract unit price per LUMP SUM and such unit price shall include all labor, materials, and equipment costs to fabricate, construct, furnish and install the various elements that constitute the ENTRANCE SIGN as indicated on the drawings and as specified.

**Landscape Plantings**

Contractor shall include the supplying of all materials, labor, and equipment and completion of all work items associated with the installation, warranty, and maintenance of all plant material shown on the plans and specified herein. Drawings and general provisions of Contract,



including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

Establishment Period, Inspections, and Guarantees:

1. Warrant all plant material to be true to botanical name, specified size.

Establishment Period:

1. For a period of 90 days after completion of all planting operations (not including dormancy periods), the Contractor shall properly care for all materials, including watering twice a week, fertilizing, re-mulching, cultivating, adjusting of bracings or other maintenance work which is necessary to keep the plants in a healthy condition and in a plumb position. All plants shall be watered as season conditions require, and as directed by the Engineer, until provisional acceptance of the planting.

Provisional Acceptance:

1. At the end of the Establishment period, the planting shall be inspected by the Engineer for provisional acceptance of the planting. Any plant material which is dead, damaged, untrue to natural form of the species, or otherwise unhealthy, shall be replaced by the Contractor at his expense. The Owner shall accept maintenance responsibilities of the planting after the provisional acceptance.

Guarantee and Final Acceptance:

1. The Contractor shall guarantee that all plants shall be in a healthy and vigorous condition two years after the date of the provisional acceptance. The planting shall be inspected by the Engineer at the end of the guarantee period. Any plant material which is dead, damaged, untrue to natural form of the species, or otherwise unhealthy, shall be replaced by the Contractor at his expense.

Replacements:

1. During establishment and guarantee periods, replace, at no additional expense to the Owner, plant materials that are dead or that are, in the opinion of the Engineer, in an unhealthy or unsightly condition, or that have lost their natural shape due to dead branches, excessive pruning, or inadequate or improper maintenance. Rejected plant materials shall be removed from the site and legally disposed of at no additional expense to the Owner.
2. Multiple replacements, if required, shall be made to maintain the plantings as specified during warranty period.
3. Replacement plants and planting operations shall be in accordance with the original specifications. Replacements shall be made no later than the next

succeeding planting season. Fully restore areas damaged by replacement operations to their original and specified condition.

4. The Contractor will not be responsible for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents beyond Contractor's control which result from natural causes such as floods, lightning, storms, freezing rains, or winds over 60 miles per hour, fires or vandalism.

The Contractor shall be a company specializing in landscape installation involving large caliper tree handling and planting. Demonstrated recent experience in projects of similar scope and size will be required.

Source Quality Control:

1. Certification: All landscape materials shall be inspected and certified. The stock shall comply with regulations at the supply source and the project site.
2. Analysis and standards: Products in sealed containers shall be labeled with manufacturer's certified analysis. Bulk materials shall be tested by an approved laboratory in accordance with procedures established by the Association of Official Agricultural Chemists or as specified by product specifications referenced herein.
3. Plant material selection: Prior to digging and shipment, plant materials shall be tagged for inspection and approval by the Engineer. Notify the Engineer of proposed plant material sources within 14 days of contract award.
4. Tags shall not be removed from plant materials until after final acceptance. Missing tags shall be grounds for rejection of the plant materials at the site.

Substitutions:

1. If unable to locate specified landscape materials, notify the Engineer for alternate sources or substitutes. Adjustments will be made at no additional cost to the Owner. If replacements are downsized, credits to the Owner will be based on comparable cost differentials customary for materials and sizes involved.
2. Plants shall be supplied at the sizes specified. Plants of larger size may be used if acceptable to the Engineer and if sizes or roots or balls are increased proportionately.
3. Container plants may be substituted for those designated "B & B."

References:

All materials and work shall comply with applicable sections of the following references:

1. American Association of Nurserymen, Inc. (AAN) Standard: American Standard for Nursery Stock (Latest Edition).
2. Hortus Third, Cornell University, 1976.

3. Peat Moss; Humus; and Peat, Reed Sedge. Federal Specification: Q-P-166E.
4. Fertilizer; Mixed Commercial. Federal Specification: O-F-241D.

Submittals shall be as directed by the Engineer.

Representative samples of the following materials shall be provided to the Owner's Representative from the supply source used:

1. Plant material: Samples or photos may be requested in lieu of inspection.
2. Mulch: 5 lb sample.
3. Staking and guying material.

Phytosanitary certification: All plant material inspection certificates required by federal, state or other governing authorities will accompany each shipment and be turned over to the Engineer upon delivery.

Invoice: Vendor or grower's invoice for each shipment of plants shall show sizes, quantities, and root treatment of plants, i.e., containerized, balled and burlapped, or bare root.

Construction Schedule: Upon authorization to proceed with the work, submit three (3) copies of construction schedule indicating dates for the items of work.

As-Built Drawings: Upon completion of work, submit one (1) copy of the plans, indication with dimensions from permanent structure the location of any items that have been installed in locations other than those originally shown on the plans.

Product Delivery, Storage, and Handling:

1. Notify Engineer of all delivery times.
2. Store materials only in sections approved by the Engineer.

Utilities: Contractor shall contact JULIE to have all underground utilities located by servicing agencies. In the vicinity of utilities, excavate by hand to minimize possibility of damage to underground utilities. Use of Village fire hydrants is prohibited without the consent in writing from the Owner.

Excavation: When conditions detrimental to plant growth are encountered such as rubble fill, adverse drainage conditions, or obstructions, notify Engineer before planting.

Planting Season:

1. Unless approved by the Owner, plant materials shall be planted in the following time periods:
  - A. Between April 1 and May 15
  - B. Between September 1 and October 31
2. If special conditions exist which warrant installation outside the normal planting season, submit a written request to the Engineer describing conditions and stating

the proposed variance. Permission for the variance will be given only if, in the opinion of the Engineer, the variance is warranted.

Work Schedule:

1. Upon authorization to proceed with the work, submit a project work schedule indicating the dates of each of the following items:
  - A. Tagging of plants in nurseries.
  - B. Spreading of topsoil on the site.
  - C. Delivery of other materials to the site.
  - D. Layout of plant materials on the site.
  - E. Digging and preparation of plant pits and beds.
  - F. Delivery of plant material to the site.
  - G. Planting.
  - H. Substantial completion of the work.
2. Notify Engineer in advance of any deviations from schedule.

Coordination with Other Work:

1. Proceed with and complete landscape work as rapidly as portions of the site become available, working within the seasonal limitations for each kind of landscape work required.
2. Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned.

Products:

1. Plant Materials:
  - A. Name and Variety: Provide plant materials true to name and variety established by the American Joint Committee on Horticultural Nomenclature "Standardized Plant Names", (Latest Edition).
  - B. All planting stock shall be nursery-grown in accordance with good horticultural practice. Plants shall be free of disease, insects, eggs, larvae, and defects such as knots, sun-scald, injuries, abrasions, or disfigurement. They shall be sound, healthy, and vigorous, of uniform growth, typical of the species and variety, well-formed, free from irregularities, with the minimum quality conforming to American Standard for Nursery Stock.
  - C. Plants indicated as specimen shall be exceptionally heavy, symmetrical, and tightly knit, cultured, to be unquestionably superior in form, branching, compactness, and symmetry.
  - D. The minimum acceptable sizes of all plants shall be measured before pruning and with branches in normal position. Unless otherwise

designated on the plant list, all plant dimensions shall conform to those listed in ANSI Z60.1, American Standard for Nursery Stock.

- i. Height is indicated as a minimum dimension required for acceptable material.
    - ii. Spread shall meet the minimum dimension specified in all directions and must be considered as pivoting on the center of plant. Where tolerance is shown between two spread dimensions, the smaller dimension is the minimum acceptable. Spreads shall at least average on the median of the range indicated.
    - iii. Caliper is the trunk diameter taken at a specified distance above root collar as described in ANSI Z60.1.
  - E. Condition is the factor controlled by vitality and ability to survive and thrive and be comparable with normal plants of the same species and variety in the vicinity at the same season of the year.
  - F. Branching point is the distance above ground where balanced branching occurs or where a dimension in trunk appears to form the head of the tree.
  - G. Root Treatment: Root treatments on all plants shall conform to the requirements of ANSI Z60.1. Plants shall be dug and prepared for shipment in a manner that will not cause damage to branches, shape, and future development after planting.
  - H. Plant materials shall be subject to final approval by the Engineer at the site before installation.
2. Topsoil:
  - A. Imported topsoil shall consist of fertile friable natural loam, containing a liberal amount of humus and shall be subject to inspection and approval at the source of supply. It shall be free of admixtures of subsoil and free of crab grass, roots, noxious weed seeds, stones, lumps, plants or their roots, sticks and other extraneous matter, and shall not be used for planting operations while in a frozen or muddy condition.
  - B. The topsoil shall be neither excessively acid nor excessively alkaline harmful to the growth of plants. If there is any question regarding the suitability of the imported topsoil, the Owner may require the Contractor to have representative samples of the topsoil tested at an appropriate testing station at no cost to the Owner.
  - C. All topsoil shall be thoroughly pulverized prior to placement.
3. Fertilizer:
  - A. Fertilizer for seeded areas shall be applied according to Standard Specifications Article 250.04.

- B. Fertilizer for planted areas shall consist of application of Nutri-Pak 16-8-8 3-year time release Fertilizer Planting Packets as supplied by JRP International. Refer to manufacturer's recommendation for application rates.
4. Soil Amendments:
- A. Peat shall meet the requirements of Federal Specification Q-P-166E, Type II.
  - B. Sand shall be clean, coarse, ungraded, meeting the requirements of ASTM C33 for fine aggregates.
  - C. Superphosphate shall be composed of finely ground phosphate rock, as commonly used for agricultural purposes, containing not less than 15 percent available phosphoric acid.
  - D. Granular fertilizer shall conform to Fed. Spec. Q-F-241, Type I, Level B, and shall bear the manufacturers guaranteed statement of analysis.
    - i. Granular fertilizer shall contain a minimum percentage by weight of nitrogen (of which 50 percent shall be organic), available phosphoric acid, and potash.
    - ii. Fertilizer analysis to be determined by Engineer upon receipt of soil test results.
  - E. pH Adjusters
    - i. Lime shall be ground dolomite limestone, containing not less than 85 percent calcium and magnesium carbonates, 50 percent passing through 100 mesh screen, 98 percent passing 20 mesh screen.
    - ii. Elemental sulphur shall be finely ground horticultural grade material containing at least 95 percent purity.
5. Mulch Materials:
- A. Mulch material for shrubs, shade and flowering trees shall consist of clean, composted, finely shredded cedar bark, free from other foreign material and large pieces over 2 inches long.
6. Staking and Guying Materials:
- A. Staking and guying shall only be required of specific plants by the Engineer.
  - B. Wire stays for tree supports shall be pliable, No. 12 to 14 gauge (2.7 to 2.0 mm) galvanized wire.
  - C. Hose for chafing guards shall be new or used two-ply fiber-reinforced garden hose of not less than 1/2-inch (13 mm) inside diameter. Factory seconds and rejects are acceptable, color black.

- D. Cable for guying trees shall be 3/16-inch diameter (5 mm), 7 strand, cadmium-plated steel.
  - E. Cable clamps and turnbuckles shall be heavy galvanized, strong forged steel. Turnbuckles shall be 3/8-inch (10 mm) eye with 6-inch (150 mm) minimum opening.
  - F. Flags for guys shall be 18-in (50 cm) sections of white 1-inch (2.5 cm) diameter PVC pipe
  - G. Earth anchors shall be cast alloy conforming to ASTM B26 with 1/8" x 7 x 7 galvanized high strength steel cable tag line. Holding power in normal soil shall be a minimum 1100 lbs. Anchor shall be Duckbill Model 68 by Foresight Industries or approved equal.
7. Tree Wrap:
- A. Tree wrap shall be waterproofed crepe paper 2-1/2 inches (64 mm) wide, made up of two layers of crepe kraft paper weighing not less than 30 pounds (13.6 kg) each ream and cemented together with asphalt.
  - B. Twine used to secure tree wrap shall be composed of minimum of two-ply jute material.
8. Herbicides:
- A. Herbicide products and rates of application shall be submitted for approval prior to use. Contractor must follow current Illinois pesticide acts.
9. Soil Mixes:
- A. Trees shall be planted using native topsoil.

Preparation:

- 1. Individual plant locations shall be staked on the project site by the Contractor and approved by the Engineer before any planting pits are dug. The Engineer reserves the right to adjust plant material locations to meet field conditions, without additional cost to the Owner.
- 2. Accurately stake plant material according to the drawings. Stakes shall be above grade and painted a bright color to be clearly visible for inspection.
- 3. If obstructions are encountered that are not indicated, do not proceed with planting operations until alternative plant locations have been selected and approved in writing by the Engineer. Where location or spacing dimensions are not clearly shown, request clarification by the Engineer.

Excavation:

- 1. Rocks and other underground obstructions shall be removed to a depth necessary to permit proper planting according to plans and specifications. If underground

utilities or other structural obstructions are encountered, alternate planting locations shall be determined by the Engineer.

2. Plant pits shall be dug only by methods approved by the Engineer.
  - A. Planting pits shall be round, with sloped sides and flat bottoms, and sized in accordance with outlines and dimensions shown on the drawings.
  - B. If rotating augers or other mechanical diggers are used to excavate holes, scarify or fracture all surfaces.
  - C. Loosen or scarify in the bottom of all plant pits to a depth of 4 inches.
3. Excavated material that is unsuitable i.e. that containing clay, rocks, or foreign debris will not be used for backfill in any planter or planting pit and shall be removed to an area designated by the Engineer.

**Planting:**

1. Planting, unless otherwise directed, shall be performed as specified. Planting shall not be done when the ground is frozen, unless approved by the Engineer.
2. Balled and burlapped plants:
  - A. Dig pit to depth necessary to set the plant to required grade. Set the plant in the pit, on undisturbed subgrade, to the proper elevation and position, faced to give the best appearance or relationship to one another and adjacent structures.
  - B. Cut away burlap, rope, wire, or other wrapping materials from the top of the ball and remove from pit. Do not remove burlap or ties from sides or bottom of ball. If plastic wrap or other non-degradable materials are used in lieu of burlap, completely remove them before placing of backfill. Cleanly cut off broken or frayed roots.
  - C. Place planting mixture around the ball and carefully compact to avoid injury to the roots and to fill the voids. After backfilling planting pit approximately two-thirds full, add water and allow planting mixture to settle. After the water has been absorbed, fill the planting pit with planting mixture and tamp light to grade and form a watering basin of the size indicated.
3. Plant container-grown stock as specified above for balled and burlapped plants and as modified herein. Remove containers before planting and sever the sides of the root ball in several places, loosening the roots on the outside of the ball sufficiently to encourage rapid root extension into the surrounding soil and to prevent girding of root mass.

**Fertilizing:**

1. Amend all planting backfill and bed mixes at rates specified.



Mulching:

1. Mulching shall take place within 48 hours after planting.
2. Mulch tree planting pits to a uniform depth of three inches (3").
3. Mulch shall be kept out of the crowns of shrubs and off buildings, sidewalks, light standards, and other structures.

Pruning:

1. After planting, properly prune the branches of deciduous stock to balance the loss of roots in such manner as to retain the natural form of the plant type. Pruning shall be done by workmen experienced in this type of work and to accepted horticultural and arboricultural standards. Damaged branches shall be pruned. Pruning shall be subject to Owner's approval.
2. Trimmings shall be removed from the site.

Trees:

1. Properly prune trees by removing all dead wood, badly formed, interfering limbs, and sufficient other growth to insure healthy and symmetrical growth of new wood. Pruning shall follow accepted horticultural and arboricultural practices. The proportion of material removed from pruned trees is, in all cases, subject to the approval of the Engineer.
2. In the case of multiple leaders, preserve the one which will best promote the symmetry of the tree, and remove or cut back the remainder so that they will not compete with the selected leader. Cut back surrounding top branches to conform to the leader.
3. Do not paint pruning cuts.

Shrubs:

1. Prune shrubs by removing all dead wood and broken branches, thinning out canes and cutting back or removing unsymmetrical branches. Pruning shall result in a loose outline conforming to the general shape of the shrub type. Do not use hedge shears.

Wrapping:

1. The trunks of broadleaf trees shall be wrapped immediately after planting but not before the condition of the trunk has been inspected and approved.
2. Trees shall be wrapped in the specified material beginning at the base and extending to the first branch. The wrap shall be applied in a spiral manner with an overlap of one-half the width of the paper.
3. The wrapping shall be securely tied at the top and bottom and at 18-inch (45 cm) maximum intervals with twine.

Bracing:

1. Contractor, at his option, may brace the plant materials as necessary.

Cleanup and Protection:

1. Excess and waste material shall be removed daily.
2. When planting in an area has been completed, the area shall be cleared of all debris, soil piles, and containers.
3. At least one paved pedestrian access route and one paved vehicular access route to each building shall be kept clean at all times. Other paving shall be cleaned when work in adjacent areas is completed.

Repairs:

1. Any damage to existing landscape, paving, or other such features as a result of work related to this contract shall be repaired.

Protection:

1. Protect landscape work and materials from damage due to landscape operations, operations by other Subcontractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

Method of Measurement:

1. LANDSCAPE PLANTINGS (trees, shrubs, perennials, ground covers, bulbs) shall be measured per EACH. Only acceptable plants will be measured for payment. All materials required to provide and establish healthy, thriving plant material shall be considered incidental to this item.

Basis of Payment:

1. LANDSCAPE PLANTINGS shall be paid for at the contract price per EACH, which price shall include furnishing and installing the plant material of the type and size specified, and all materials, equipment and labor necessary to complete the work. Also included with these items is all initial maintenance as described.

**Topsoil for Planting**

This work shall consist of locating, stockpiling, testing, preparing, and placing topsoil for planting including finish grading at locations shown on the plans or as directed by the Engineer. Work under this item shall be performed in accordance with Section 200 of the Standard Specifications for Road and Bridge Construction except as modified herein.

General Requirements:

1. In general the topsoil for planting shall be a mixture of pulverized topsoil and coarse sand. The sand, in the amount required to produce an acceptable topsoil

for planting, shall be added and mixed during the pulverization process only. The sand shall be of an FA 2 gradation.

**Soil Stockpiling:**

1. The Contractor shall obtain the total quantity of topsoil for planting required for this project and stockpile this material at an acceptable offsite location a minimum of 30 days in advance of placement. The stockpile must be covered to avoid excessive moisture content and erosion. The Contractor shall have the material tested following the guidelines presented below under Soil Testing and, if approved, this stockpile shall be the sole source for topsoil for planting to be delivered to site. The test results along with a Request for Inspection form should be sent to the Engineer prior to delivering the material to site. This transmittal must also identify the location of the stockpile. If there are any changes in source the Contractor shall notify the Engineer immediately. There will be no additional time allowed for the completion of this project in order to substitute, test, and approve a new source of topsoil for planting.

**Delivery, Storage and Handling**

1. Protect soil from absorbing excess water and from erosion at all times. Do not store materials unprotected from large rainfall events. Do not allow excess water to enter site prior.

**Soil Testing:**

1. No topsoil for planting shall be delivered to the site until the Engineer has reviewed test results and has accepted the topsoil for planting. The Contractor shall employ a soil testing agency acceptable to the Engineer, which uses test methods approved by the Association of Agricultural Chemists. Test frequency shall be as follows:

<u>Quantity of Soil Placed (c.y.)</u>	<u>Number of Tests</u>
1-200	1
200 -1000	3
1000<	$((\text{Quantity} - 1000) / 500) + 3$ round up to whole number

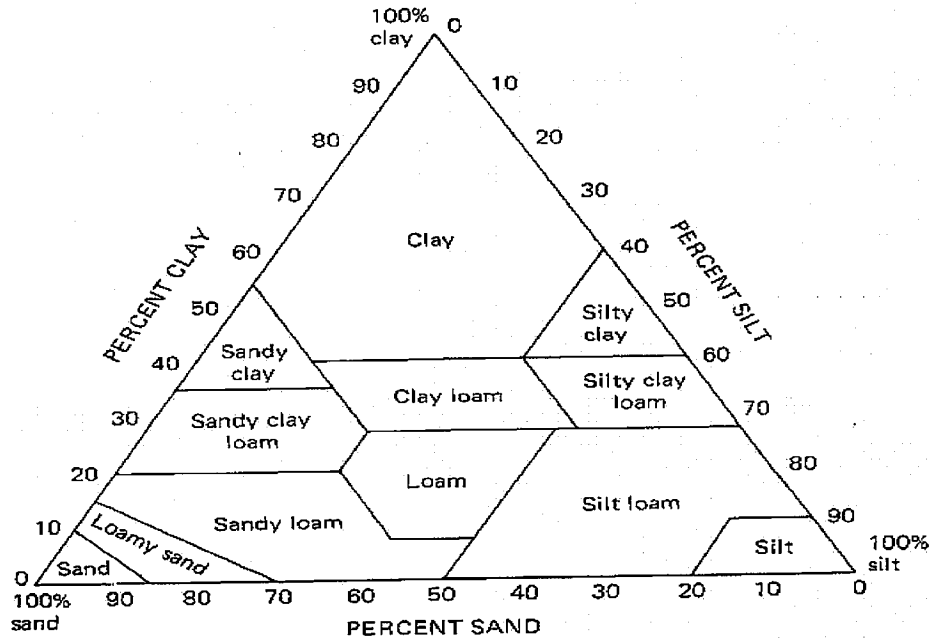
2. When more than one test is performed, the average of the test results will be used to determine acceptance.
3. The topsoil for planting test report must contain the following information:
 

A.	Chemical Analysis:	HIGH	LOW
	i. pH	7.0	6.5
B.	Mechanical Analysis		
	i. % clay	25%	0%
	ii. % silt	77%	45%

iii. % sand 33% 25%

C. Additionally the following variables are required.

- i. cation exchange capacity (CEC)
- ii. soluble salts
- iii. organic matter
- iv. phosphorous
- v. available potassium
- vi. nutrients
- vii. residual chemicals



The mechanical analysis should show that the % sand, % silt, and the % clay must yield a silt loam soil. See the Textural Classes diagram above. To determine the class plot a line parallel to the % clay axis starting the line at the value of the % silt. Plot another line parallel to the % sand axis starting the line at the value of the % clay. The intersection of these lines must be in the silt loam region, for the soil to be approved.

**Preparation and Placement:**

1. Perform or coordinate final adjustments of any utility structure.
2. Clean planters of all trash and debris before placement of soil mix. Remove and legally dispose of debris off site. Repair to the satisfaction of the Engineer any portion of the geotechnical fabric or drainage layers prior to installation of the topsoil for planting mix.
3. Place, spread and rough grade specified the topsoil for planting to depths specified in all areas to be planted. Place the topsoil for planting mix in two (2) lifts. The first lift shall contain 2/3 of the planter soil depth. After placing each lift, moisten the surface at a rate sufficient to hydraulically settle the soil, as determined by the Engineer. Allow water to thoroughly percolate through the soil before placing the next lift. Allow for settling, and place additional topsoil for planting as necessary. Allow for placement and mixing of organic material, as determined by the Engineer, but place enough soil mix to meet finish grades within +/- 0.10 foot of design grades.
4. Rake smooth and finish grade all planted areas. The removal of excess material or the addition of topsoil for planting maybe required prior to landscaping. This shall be considered incidental to topsoil for planting. Grading will be to a

tolerance +/- 0.10 foot of design grades. Any grade disturbed by irrigation installation shall be restored to finish grade and raked smooth.

5. All debris, litter, tire tracks, dirt, and unintended materials shall be removed, swept or washed off of all landscape, hard median surfaces, and pavement on a daily basis.

Planter Soil Acceptance:

1. The Engineer retains the right to visually inspect the topsoil for planting mix on site before placement. The Engineer may ask that material suspected of not meeting specification be removed from the site, until the material can be mechanically tested.
2. The final determination of the planter soil quality shall be based upon soil tests taken by the Engineer. The samples shall be taken at the time of the topsoil for planting installation. The samples will be tested by independent accredited agencies, for the Engineer. The test frequency shall be the same as listed above. When more than one test is required, the percentages of sand, silt and clay will be averaged. This averaged value will be used to determine the soil quality.
3. If the averaged test result for sand or silt content is outside the range specified by less than five (5%) percent, an adjusted unit price will be used in computing payment for the topsoil for planting. The adjusted unit price will be a percentage of the contract unit price as given in the following schedule:

<u>Average Sand or Silt Deficiency</u>	<u>Percent of Contract Payment</u>
0 to 2	80
2.1 to 4	66
4.1 to 5	50

4. Clay content in excess of this specification by two (2%) percent or less: If the averaged result for clay content is outside the range specified by less than two (2%) percent an adjusted unit price will be used in computing payment for the topsoil for planting. The adjusted unit price will be sixty-six (66%) percent of the contract unit price.
5. The Contractor shall remove all topsoil for planting and install material meeting this specification. The Contractor shall be responsible for all costs incurred to remove deficient material and install acceptable topsoil for planting. The Contractor shall be responsible for any damage to plant material, irrigation system, waterproof membrane, or any other damage caused by this work. The Contractor shall be responsible for all additional traffic control. No additional time will be provided in the contract to perform remedial work.

Method of Measurement:

1. TOPSOIL FOR PLANTING shall be measured for payment in cubic yards, in place and the volume computed by the method of average end areas. Payment will not be made based on load tickets.

Basis of Payment:

1. TOPSOIL FOR PLANTING shall be paid for at the contract unit price per cubic yard, which price shall include all testing, furnishing, stockpiling, transporting of materials, and all labor and equipment necessary to complete the work as specified.

**Mulch Placement 4"**

This item shall consist of furnishing, transporting and placing of MULCH PLACEMENT 4" in landscape planting beds and at the base of existing trees as shown in the construction documents.

General Requirements:

1. The Contractor must supply and install Mulch as required to mulch around shrubs and herbaceous plants in landscaped areas.
2. The Contractor must remove all litter and plant debris before mulching. Care must be taken not to bury leaves, stems, or vines under mulch material.
3. All finished mulch areas must be left smooth and level to maintain a uniform surface and appearance. All planting areas or work areas must be clean of debris and mulch, prior to leaving the site.

Materials:

1. Mulch must be clean, finely shredded mixed-hardwood bark, not to exceed 2" in its largest dimension, free of foreign matter, sticks, stones, and clods.
2. All Mulch must be processed through a hammermill. Hardwood bark not processed through a hammermill must not be accepted.
3. A sample and request for material inspection form must be supplied to the Architect for approval prior to performing any work.

Installation:

1. Place mulch layer around all plants as follows:
  - A. Perennials, including perennials, bulbs, ground cover, vines, grasses: 4" deep - keep mulch away from crowns of plants.
  - B. Shrubs, including shrubs and roses: 4" deep - keep mulch away from stem, crown, or neck of shrub.
  - C. Trees, shade and ornamental: 4" deep - keep mulch away from the trunk of the tree.

Method of Measurement:

1. MULCH PLACEMENT 4" will be measured for payment in place and the area computed per SQUARE YARD of mulch installed. This item will not be paid by Load Tickets.

Basis of Payment:

1. The work under this item must be paid for at the contract unit price per SQUARE YARD as shown in the Schedule of Unit Prices for MULCH PLACEMENT 4" including all labor, material, equipment, and Traffic Control and Protection necessary to complete the work.

**Unit Pavers**

Contractor shall provide all equipment and materials, and do all work necessary to construct the unit paving as indicated on the Drawings and as specified.

Except as modified herein, the work shall be in accordance with the applicable portions of the Standard Specifications.

Qualifications:

1. Contractor shall provide evidence that his firm or other entity propose for the unit paving work has specific experience meeting the following criteria:
2. Experience installing unit pavers using sand and HMA setting beds.
3. Installed (within past three years) a minimum of 100,000 square feet per year for the past three years of unit paving using both sand and HMA setting beds.
4. The same experienced supervisory personnel will be made available for this project.
5. HMA setting bed work shall not be sublet.
6. If requested the paving firm shall submit list of comparable projects setting forth description, square footage, location and knowledgeable references with addresses and phone numbers.

Samples:

1. Submittals shall be in accordance with the instructions provided in this manual or as directed by the Engineer prior to the beginning of construction.
2. Contractor shall submit to the Owner's Representative a minimum of 16 square feet of unit pavers for approval. Submittal shall indicate the full range of unit pavers in the specified color.

Extra Material Stock:

1. The Contractor shall supply and deliver two (2) extra standard pallets of each type of unit pavers to the Owner upon completion of the work. Pavers shall be new,



banded on a pallet, and shall be as shipped from the factory. The Contractor shall deliver and off-load the pavers to a location approved by the Village of Oak Park.

2. This extra material stock shall be considered incidental to the unit paver work and shall not be paid for separately.

Substitutions:

1. All material substitutions must be submitted to the Owner's Representative and Owner for review no later than ten (10) days prior to submitting bids.
2. Submittals for consideration shall include full-sized samples and technical specifications.
3. Owner's Representative will review substitution submittal and, if approved, will issue written approval.
4. Substitution submittals received after time outlined above will not be considered.
5. Substitutions during construction will not be allowed.

Access to Business and Homes and Public Sidewalks:

1. During the installation of the paver units and base Contractor shall keep driveways and entrances serving the businesses and homes clear and available to the Owner and the business' employees at all times. Customer access shall be maintained during normal business hours. Contractor shall be responsible for providing temporary structures such as wooden bridges, ramps, or walkways as required to provide the public safe, secure, and recognizable access ways to businesses during construction.

Products:

1. Unit Pavers:
  - A. UNIT PAVERS shall be as manufactured by Pine Hall Brick (Local Representative – Northern Illinois Brick and Supply 847.468-0091) or approved equal.
  - B. Paver mix shall include the following paver colors:
    - i. 75% English Edge Ironspot
    - ii. 15% English Edge Dark Accent
    - iii. 10% English Edge Red
  - C. All UNIT PAVERS shall be 4" x 8" x 3-1/8" in size and shall have rolled (or repressed) chamfers.
  - D. All UNIT PAVERS shall meet the requirements for ASTM Designation C902, Standard Specification for Pedestrian and Light Traffic Paving Brick, Class SX, type 1, PS. PX Pavers and pavers suitable for heavy traffic shall be required for installation in all crosswalks.

- E. All UNIT PAVERS shall conform to severe freeze-thaw test requirements of ASTM Designation C67 on sampling and testing brick.
  - F. Tolerances on Dimensions shall be within the allowable range as classified under the ASTM Designation C902.
  - G. Texture and color variation on pavers will meet ASTM Designation C216, Type FBS.
2. HMA Setting Bed Components:
- A. Asphalt Cement: Shall conform to ASTM D3381 with a viscosity grade of A.C. 10 or A.C. 20.
  - B. Aggregates: Clean, hard sand with durable particles and free from adherent coating, lumps of clay, alkali salts, and organic matter. Sand shall be uniformly graded from coarse to fine with all passing the No. 4 sieve and shall meet screen analysis test, ASTM C136.
  - C. Mix Ratios: 7 percent asphalt (by weight), 93 percent aggregates (by weight). Each ton shall be apportioned by weight in the approximate ratio of 145 pounds asphalt cement to 1,855 pounds aggregate.
  - D. Mix Requirements: HMA setting bed shall be plant mixed and heated to approximately 300°F.
  - E. Contractor shall determine exact proportions to produce the appropriate mixture for construction of the HMA setting bed to meet construction requirements.
  - F. Setting Bed Primer: Shall conform to ASTM D 2028 - Standard Specification for Cutback Asphalt (Rapid-Curing Type).
3. Neoprene Tack Coat Components:
- A. Mastic (asphalt adhesive):
    - i. Solids (base): 75 percent ± 1 percent.
    - ii. Pounds/gallon: 8-8.5 pounds/gallon
    - iii. Solvent: Varsol (over 100° F. flash)
  - B. Solids (base):
    - i. 2 percent Neoprene.
    - ii. 10 percent Fiber.
    - iii. 88 percent Asphalt.
  - C. Melting Point: ASTM D 36, 200°F. minimum.
  - D. Penetration: 77 ° F 100 gram load, 5-second (.1 mm) 23-27.

E. Ductility: ASTM D 113 at 25°C.,  $\pm 0.5^\circ\text{C}$  ( $77^\circ\text{F} \pm 0.9^\circ\text{F}$ ) 5 cm per minute ( $\pm 5\%$ )

4. Paver Joint Material:

A. Sand: Dry sand conforming to ASTM C-144 with all particles passing the No. 16 sieve.

Execution:

1. General

A. All pavers shall be installed per the respective manufacturer's recommendations.

B. No paver setting work shall be performed when the underlayment has free moisture, ice, or snow, or when the underlayment is frozen.

C. Concrete underlayment shall be sound, clean, and free from debris and materials or substances which will hinder the bond of the setting bed. The top surface of concrete underlayment slab shall not vary more than one half (1/2) inch of its proposed elevation.

D. No HMA setting bed work shall be performed when the ambient temperature is below 40°F. or at 40°F. and falling, or at any time when the setting bed stiffens before paver units are installed.

2. Paver Cutting:

A. To reduce dust during paver installation, unit pavers shall only be cut using wet saws. No dry cutting permitted.

B. Cut pavers shall be placed in areas shown on the details in the plans. "L" shaped pavers shall be avoided where possible.

C. Pavers shall be cut radially when joints between pavers on curves exceed 1/8 inch.

D. Radial cut pavers shall be created by trimming both sides of paver.

3. HMA Setting Bed Preparation:

A. Where required, install steel paver edging as shown on drawings.

B. Place 3/4-inch deep control bars in parallel directly over base to be used as guides for striking board. Use wood shims under control bars to set proper grade.

C. Place hot (250°F+) HMA setting bed material between control bars and strike with striking board to create a smooth, firm, and even setting bed. Additional HMA material may be necessary to achieve consistent quality setting bed.

- D. After completion of first setting bed panel, advance first control bar and wood shims to next position to prepare next panel. Contractor shall carefully fill depressions that remain between panels.
  - E. Repeat procedure for successive setting bed panels. No wood shims or control bars shall be allowed to remain in the HMA setting bed.
  - F. Roll hot setting bed with a power roller (not over one (1) ton in weight) to a nominal depth of 3/4 inches. This thickness shall be adjusted so that when the pavers are placed and rolled, the top surface of the pavers will be at the required final grade.
  - G. Apply neoprene tack coat to surface of HMA setting bed by mopping, squeegeeing, or troweling.
4. Paver Installation:
- A. Place pavers by hand in straight courses with hand tight joints and uniform top surface. Good alignment shall be kept and patterns shall be as shown on plans and details.
  - B. Protect the alignment and elevations of the newly laid pavers with plywood sheeting at all times. Advance the plywood as work progresses and maintain plywood protection over all areas subject to movement of materials, workers, and equipment.
  - C. Pavers shall be cut only when necessary and used in courses as indicated on plans and details.
  - D. Joints in the underlayment, if any, shall not reflect up through the setting bed and paver system.
  - E. When all pavers are installed, apply joint sand to paving and sweep into all joints until joints are completely filled. Sweep clean the entire surface and remove all excess sand. Do not allow traffic on pavers prior to joints being filled.
  - F. Protect newly laid pavers, slabs and curbs with plywood panels on which workers stand. Advance protective panels as work progresses but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of installed pavers, slabs or curbs.
  - G. Replace cracked or chipped unit pavers at no additional cost to the Owner.
5. Cleaning of Paved Surface:
- A. After completion of the unit pavers, paver installation areas shall be thoroughly swept clean and surface shall be left unsoiled. Where required by the Owner's Representative, surface shall be cleaned with water or an approved cleaner.

Method of Measurement:

1. This work shall be measured in place at the contract unit price per square foot for UNIT PAVERS.

Basis of Payment:

1. This work shall be paid for at the contract unit price per square foot for UNIT PAVERS. Subgrade granular material, P.C.C. underlayment, HMA setting bed, neoprene tack coat, joint sand, sealant and stabilizer, and paver edging shall be considered incidental to the unit price and shall not be paid for separately.

**Ornamental Fence**

The Work under this section shall consist of providing all labor, materials, tools, and equipment as necessary to fabricate, finish, deliver and install ORNAMENTAL FENCE complete as indicated on the drawings and as specified herein. Ornamental Fence shall be a 3-rail design fabricated from welded ornamental steel.

Field Measurements: Stake and verify layout information for fencing shown on the Drawings with Engineer prior to installation.

Quality Assurance: Comply with quality assurance measures as herein specified.

Codes and Standards: Comply with provisions of following codes, specifications and standards except as otherwise indicated.

1. American Welding Society D1.1, "Structural Welding Code - Steel".

**SUBMITTALS:** The following items must be submitted to the Resident Engineer for approval before production can begin:

1. Structural Engineer's Qualifications: A structural engineer who is legally authorized to practice in Illinois and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of steel units that are similar to that indicated for this Project in material, design, and extent.
2. Manufacturers' Qualifications: Only firms having a minimum of 5 years successful experience in the manufacture of steel products, similar to units required for this project, and whose facilities are engaged primarily in the manufacture of such products, will be acceptable.
3. Product Data: Producer's or manufacturer's information for products as follows, including sufficient data to show compliance with specified requirements:

4. Specifications for paint system, including manufacturer's data on chemical composition, and dry film thickness per applied coat including specifications and color samples for all coatings.
5. Shop Drawings:
  - a. Shop Drawings: Show location of fencing and posts, details of post and panels, expansion joints and attachment details, including information on location, type, and size of all connections, distinguishing between those made in the shop and those made in the field.
  - b. Indicate weld lengths and sizes, using standard American Welding Society (AWS) welding symbols.
  - c. Include setting drawings and templates for anchorages to be installed by others.
  - d. Complete, signed, and sealed manufacturer's shop drawings.
6. Individual piece samples and full mock-up of fence segment. Samples must include the post, fence segment, post cap, post sleeve bracket, expansion anchors and tamper-proof bolts.
7. Verification of Conditions: Examine areas of conditions for installation of ornamental metal fence assemblies and verify that the work may properly proceed. Do not commence installation until unsatisfactory conditions have been corrected or fabricated fence components have been adjusted with the Resident Engineer's agreement.

Mock Up: Fabricator to prepare full-size mock up of one panel segment for review by the Resident Engineer. Panel segment to include posts, bar stock and channel fence pickets and rails, post caps, expansion anchors and tamper-proof bolts.

Welder Qualifications: Evidence that welders employed in the work are currently certified under American Welding Society (AWS) qualification procedures.

Regulatory Requirements: Unless other requirements of governing authorities or particular requirements of this specification are more stringent, comply with provisions of the following:

1. AISC "Code of Standard Practice for Steel Buildings and Bridges".
2. AISC "Specification for Structural Steel Buildings -- Allowable Stress Design and Plastic Design," with Commentary and Supplements.
3. AWS D1.1, "Structural Welding Code - Steel."

**Shipping:** Deliver ornamental metal fence assemblies in timely fashion, to permit the most efficient and economical flow of work. Deliver assembly members properly marked for field installation. Deliver expansion anchors, washers, nuts, set screws and other anchorage devices to be built into other work in time to avoid delays and permit their proper identification.

**Storage:** Protect ornamental metal fence assemblies, anchorages and other materials of this section from damage and corrosion. If temporary storage at the project site is required, keep assemblies off the ground, using platforms or pallets, in location easily accessible for inspection.

#### PRODUCTS

Ornamental Fence shall be Ameristar Montage Majestic 3-rail as manufactured by Ameristar Fence Products, Tulsa, Oklahoma or approved equal. Additional acceptable Manufacturer for ornamental fence: Master Halco Inc., Orange, California. Final finishing color of fence shall be black.

#### FABRICATION AND FINISHING:

Ornamental Fence shall be fabricated and finished in accordance with Manufacturer's recommended methods. Final color shall be black.

#### METHOD OF MEASUREMENT

ORNAMENTAL FENCE shall be measured for payment per LINEAL FOOT of fence completely furnished and installed.

#### BASIS OF PAYMENT

ORNAMENTAL FENCE shall be paid for at the contract unit price per LINEAL FOOT completely furnished and installed. The unit price shall include all manufacturing, delivery, off-loading, temporary storage, installation, and all equipment, labor, and materials as shown on the drawings, as specified herein, and as necessary to complete this work.

## **TRAFFIC SIGNAL SPECIFICATIONS**

Effective: May 22, 2002

Revised: January 1, 2007

These Traffic Signal Special Provisions and the "District One Standard Traffic Signal Design Details" supplement the requirements of the State of Illinois "Standard Specifications for Road and Bridge Construction." The intent of these Special Provisions is to prescribe the materials and construction methods commonly used for traffic signal installations. All material furnished shall be new. The locations and the details of all installations shall be as indicated on the Plans or as directed by the Engineer. The work to be done under this contract consists of furnishing and installing all traffic signal work as specified in the Plans and as specified herein in a manner acceptable and approved by the Engineer.

### **SECTION 720 SIGNING**

#### **Mast Arm Sign Panels**

Add the following to Section 720.02 of the Standard Specifications:

Signs attached to poles or posts (such as mast arm signs) shall have mounting brackets and sign channels which are equal to and completely interchangeable with those used by the District Sign Shops. Signfix Aluminum Channel Framing System is currently recommended, but other brands of mounting hardware are acceptable based upon the Department's approval.

### **DIVISION 800 ELECTRICAL**

#### **Inspection of Electrical Systems**

Add the following to Article 801.10 of the Standard Specifications:

All cabinets including temporary traffic signal cabinets shall be assembled by an approved equipment supplier in District One. The Department reserves the right to request any controller and cabinet to be tested at the equipment supplier facilities prior to field installation, at no extra cost to this contract. All railroad interconnected (including temporary railroad interconnect) controllers and cabinets shall be new, built, tested and approved by the controller equipment vendor, in the vendor's District One facility, prior to field installation. The vendor shall provide the technical equipment and assistance as required by the Engineer to fully test this equipment.

#### **Damage to Traffic Signal System**

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



Any damaged equipment or equipment not operating properly from any cause whatsoever shall be repaired with new equipment provided by the Contractor at no additional cost to the Contract and or owner of the traffic signal system, all as approved by the Engineer. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted. Cable splices outside the controller cabinet shall not be allowed.

### **Restoration of Work Area**

Add to Section 801 of the Standard Specifications:

Restoration of the traffic signal work area shall be included in the related pay items such as foundation, conduit, handhole, trench and backfill, etc. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded. Restoration of the work area shall be included in the contract without any extra compensation allowed to the Contractor.

### **SUBMITTALS**

Revise Article 801.05 of the Standard Specifications to read:

The Contractor shall provide:

All material approval requests shall be submitted at the preconstruction meeting, including major traffic signal items listed in the table in Article 801.05..

All material or equipment which are similar or identical shall be the product of the same manufacturer, unless necessary for system continuity. Traffic signal materials and equipment shall bear the U.L. label whenever such labeling is available.

Seven (7) copies of a letter from the Traffic Signal Contractor on company letterhead listing the contract number or permit number, project location/limits, pay item description, pay code number, manufacturer's name and model numbers of the proposed equipment and stating that the proposed equipment meets all contract requirements. The letter will be reviewed by the Traffic Design Engineer to determine whether the equipment to be used is approvable.

Seven (7) copies of shop drawings for mast arm poles and assemblies, including combination mast arm poles, are required. A minimum of two (2) copies of all other material catalog cuts are required.

Submittals for equipment and materials shall be complete. Partial or incomplete submittals will be returned without review.

Certain non-standard mast arm poles and assemblies will require additional review from IDOT's Central Office. Examples include ornamental/decorative and non-standard length mast arm pole assemblies. The Contractor shall account for the additional review time in his schedule.

The contract number or permit number, project location/limits and corresponding pay code number must be on each sheet of the letter, material catalog cuts and mast arm poles and assemblies drawings.

- a. Where certifications and/or warranties are specified, the information submitted for approval shall include certifications and warranties. Certifications involving inspections, and/or tests of material shall be complete with all test data, dates, and times.

After the Engineer reviews the submittals for conformance with the design concept of the project, the Engineer will stamp the drawings indicating their status as 'Approved', 'Approved-As-Noted',

'Disapproved', or 'Information Only'. Since the Engineer's review is for conformance with the design concept only, it is the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, layout drawings, or other documents by the Department's approval thereof. The Contractor must still be in full compliance with contract and specification requirements.

- b. All submitted items reviewed and marked 'APPROVED AS NOTED', or 'DISAPPROVED' are to be resubmitted in their entirety, unless otherwise indicated within the submittal comments, with a disposition of previous comments to verify contract compliance at no additional cost to the contract.

Exceptions, Deviations and Substitutions. In general, exceptions to and deviations from the requirements of the Contract Documents will not be allowed. It is the Contractor's responsibility to note any deviations from Contract requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution is superior to the material or equipment required by the Contract Documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.

### **Maintenance and Responsibility**

Revise Article 801.11 of the Standard Specifications to read:

- a) Existing traffic signal installations and/or any electrical facilities at all or various locations may be altered or reconstructed totally or partially as part of the work on this Contract. The Contractor is hereby advised that all traffic control equipment, presently installed at these locations, may be the property of the State of Illinois, Department of Transportation, Division of Highways, County, Private Developer, or the Municipality in which they are located. Once the Contractor has begun any work on any portion of the project, all traffic signals within the limits of this contract or those which have the item "Maintenance of Existing Traffic Signal Installation," "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation," shall become the full responsibility of the Contractor. The Contractor shall supply the engineer and the Department's Electrical Maintenance Contractor a 24-hour emergency contact name and telephone number.
- b) When the project has a pay item for "Maintenance of Existing Traffic Signal Installation," "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation," the Contractor must notify both the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 and the Department's Electrical Maintenance Contractor, of their intent to begin any physical construction work on the Contract or any portion thereof. This notification must be made a minimum of seven (7) working days prior to the start of construction to allow sufficient time for inspection of the existing traffic signal installation(s) and transfer of maintenance to the Contractor. If work is started prior to an inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The Contractor will become responsible for repairing or replacing all equipment that is not operating properly or is damaged at no cost to the owner of the traffic signal. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted.

- c) Contracts such as pavement grinding or patching which result in the destruction of traffic signal loops do not require maintenance transfer, but require a notification of intent to work and an inspection. A minimum of seven (7) working days prior to the loop removal, the Contractor shall notify the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 and the Department's Electrical Maintenance Contractor, at which time arrangements will be made to adjust the traffic controller timing to compensate for the absence of detection. See additional requirements in these specifications under Inductive Loop Detector.
- d) The Contractor is advised that the existing and/or temporary traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation, which exceeds fifteen (15) minutes, must have prior approval of the Engineer. Approval to shutdown the traffic signal installation will only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.
- e) The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals. Any inquiry, complaint or request by the Department, the Department's Electrical Maintenance Contractor or the public, shall be investigated and repairs begun within one hour. Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. The District's Electrical Maintenance Contractor may inspect any signaling device on the Department's highway system at any time without notification.

### **Traffic Signal Inspection (Turn-On)**

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

It is the intent to have all electric work completed and equipment field tested by the vendor prior to the Department's "turn-on" field inspection. If in the event the Engineer determines work is not complete and the inspection will require more than two (2) hours to complete, the inspection shall be canceled and the Contractor will be required to reschedule at another date. The maintenance of the traffic signals will not be accepted until all punch list work is corrected and re-inspected.

When the road is open to traffic, except as otherwise provided in Section 850 of the Standard Specifications, the Contractor may request a turn-on and inspection of the completed traffic signal installation at each separate location. This request must be made to the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 a minimum of seven (7) working days prior to the time of the requested inspection. The Department will not grant a field inspection until notification is provided from the Contractor that the equipment has been field tested and the intersection is operating according to Contract requirements. The Department's facsimile number is (847) 705-4089. The Contractor must invite local fire department personnel to the turn-on when Emergency Vehicle Preemption (EVP) is included in the project. The Contractor must notify the SCAT Consultant of the turn-on schedule, as well as stage changes and phase changes during construction.

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

The Contractor shall provide a representative from the control equipment vendor's office to attend the traffic signal inspection for both permanent and temporary traffic signal turn-ons. Upon demonstration that the signals are operating and all work is completed in accordance with the Contract and to the satisfaction of the Engineer, the Engineer will then allow the signals to be placed in continuous operation.

The Agency that is responsible for the maintenance of each traffic signal installation will assume the maintenance upon successful completion of this inspection.

The District requires the following from the Contractor at traffic signal turn-ons.

1. One set of signal plans of record with field revisions marked in red ink.
2. Notification from the Contractor and the equipment vendor of satisfactory field testing.
3. A knowledgeable representative of the controller equipment supplier shall be required at the traffic signal turn-on. The representative shall be knowledgeable of the cabinet design and controller functions.
4. A copy of the approved material letter.
5. One (1) copy of the operation and service manuals of the signal controller and associated control equipment.
6. Five (5) copies 11" x 17" (280 mm X 430 mm) of the cabinet wiring diagrams.
7. The controller manufacturer shall supply a printed form, not to exceed 11" x 17" (280 mm X 430 mm) for recording the traffic signal controller's timings; backup timings; coordination splits, offsets, and cycles; TBC Time of Day, Week and Year Programs; Traffic Responsive Program, Detector Phase Assignment, Type and Detector Switching; and any other functions programmable from the keyboard. The form shall include a location, date, manufacturer's name, controller model and software version. The form shall be approved by the Engineer and a minimum of three (3) copies must be furnished at each turn-on. The manufacturer must provide all programming information used within the controller at the time of turn-on.

Acceptance of the traffic signal equipment by the Department shall be based upon inspection results at the traffic signal "turn on." If approved, traffic signal acceptance shall be verbal at the "turn on" inspection followed by written correspondence from the Engineer. The Contractor shall be responsible for all traffic signal equipment and associated maintenance thereof until Departmental acceptance is granted.

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

All punch list work shall be completed within two (2) weeks after the final inspection. The Contractor shall notify the Electrical Maintenance Contractor to inspect all punch list work. Failure to meet these time constraints shall result in liquidated damage charges of \$500 per month per incident.

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

### **Locating Underground Facilities**

Revise Section 803 to the Standard Specifications to read:

If this Contract requires the services of an Electrical Contractor, the Contractor shall be responsible at his/her own expense for locating existing IDOT electrical facilities prior to performing any work. If this Contract does not require the services of an Electrical Contractor, the Contractor may request one free locate for existing IDOT electrical facilities from the District One Electrical Maintenance Contractor prior to the start of any work. Additional requests may be at the expense of the Contractor. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any facilities damaged during construction at their expense.

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

### **Electric Service Installation**

Revise Section 805 of the Standard Specifications to read:

#### **Description.**

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

#### **General.**

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

The electric utility contact information is noted on the plans and represents the current information at the time of contract preparation. The Contractor must request in writing for service and/or service modification within 10 days of contract award and must follow-up with the electric utility to assure all necessary documents and payment are received by the utility. The Contractor shall forward copies of all correspondence between the contractor and utility company. The service agreement and sketch shall be submitted for signature to the Traffic Program's engineer.

#### **Materials.**

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

#### **Enclosures.**

Pole Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 4X, unfinished single door design, fabricated from minimum 0.080-inch (2.03 mm) thick Type 5052 H-32 aluminum. Seams shall be continuous welded and ground smooth. Stainless steel screws and clamps shall secure the cover and assure a watertight seal. The cover shall be removable by pulling the continuous stainless steel hinge pin.

The cabinet shall have an oil-resistant gasket and a lock kit shall be provided with an internal O-ring in the locking mechanism assuring a watertight and dust-tight seal. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 14-inches (350 mm) high, 9-inches (225 mm) wide and 8-inches (200 mm) in depth is required. The cabinet shall be channel mounted to a wooden utility pole using assemblies recommended by the manufacturer.

**Ground Mounted Cabinet.** The cabinet shall be UL 50, NEMA Type 3R unfinished single door design with back panel. The cabinet shall be fabricated from Type 5052 H-32 aluminum with the frame and door 0.125-inch (3.175 mm) thick, the top 0.250-inch (6.350 mm) thick and the bottom 0.500-inch (12.70 mm) thick. Seams shall be continuous welded and ground smooth. The door and door opening shall be double flanged. The door shall be approximately 80% of the front surface, with a full length tamperproof stainless steel .075-inch (1.91 mm) thick hinge bolted to the cabinet with stainless steel carriage bolts and nylocks nuts. The locking mechanism shall be slam-latch type with a keyhole cover. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 40-inches (1000 mm) high, 16-inches (400 mm) wide and 15-inches (375 mm) in depth is required. The cabinet shall be mounted upon a square Type A concrete foundation as indicated on the plans. The foundation is paid for separately.

**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 <5n seconds and operate within a range of -40C to +85C. The surge protector shall be UL 1449 Listed.

**Circuit Breakers.** Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 amperes, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V.

**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.

**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.

**Utility Services Connection.** The Contractor shall notify the Utility Company marketing representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Utility Company marketing representative has received service charge payments from the Contractor. Prior to contacting the Utility Company marketing representative for service connection, the service installation controller cabinet and cable must be installed for inspection by the Utility Company.

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

#### Installation.

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.

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.

Ground Mounted. The service installation shall be mounted plumb and level on the foundation and fastened to the anchor bolts with hot-dipped galvanized or stainless steel nuts and washers. The space between the bottom of the enclosure and the top of the foundation shall be caulked at the base with silicone.

#### Basis of Payment

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

### **Grounding of Traffic Signal Systems**

#### General

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

The grounding electrode system shall include a ground rod installed with each traffic signal controller concrete foundation and all mast arm and post concrete foundations. An additional ground rod will be required at locations where measured resistance exceeds 25 ohms. Ground rods are included in the applicable foundation pay item and will not be paid for separately.

Testing shall be according to Article 801.13 (a) (4) and (5).

- a) The grounded conductor (neutral conductor) shall be white color coded. This conductor shall be bonded to the equipment grounding conductor only at the Electric Service Installation. All power cables shall include one neutral conductor of the same size.

The equipment grounding conductor shall be green color coded. The following is in addition to Article 801.04 of the Standard Specifications.

- 1) Equipment grounding conductors shall be bonded to the grounded conductor (neutral conductor) only at the Electric Service Installation. The equipment grounding conductor is paid for separately and shall be continuous. The Earth shall not be used as the equipment grounding conductor.
  - 2) Equipment grounding conductors shall be bonded, using a Listed grounding connector, to all traffic signal mast arm poles, traffic signal posts, pedestrian posts, pull boxes, handhole frames and covers and other metallic enclosures throughout the traffic signal wiring system, except where noted herein. Bonding shall be made with a splice and pigtail connection, using a sized compression type copper sleeve, sealant tape, and heat-shrinkable cap. A Listed electrical joint compound shall be applied to all conductors' terminations, connector threads and contact points.
  - 3) All metallic and non-metallic raceways containing traffic signal circuit runs shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 volts and/or fiber optic cable will not be required to include an equipment grounding conductor.
  4. Individual conductor splices in handholes shall be soldered and sealed with heat shrink. When necessary to maintain effective equipment grounding, a full cable heat shrink shall be provided over individual conductor heat shrinks.
- b) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, listed pressure connectors, listed clamps or other approved listed means.

### **Handholes**

Add the following to Section 814 of the Standard Specifications:

All handholes shall be concrete, poured in place, with inside dimensions of 21-1/2 inches (549mm) minimum. Frames and lid openings shall match this dimension. The cover of the handhole frame shall be labeled "Traffic Signals" with legible raised letters.

For grounding purposes the handhole frame shall have provisions for a 7/16 inch (15.875mm) diameter stainless bolt cast into the frame. The covers shall have a stainless steel threaded stint extended from the eye hook assembly for the purpose of attaching the grounding conductor to the handhole cover.

The minimum wall thickness for heavy duty hand holes shall be 12 inches (300mm).

All conduits shall enter the handhole at a depth of 30 inches (760mm) except for the conduits for detector loops when the handhole is less than 5 feet (1.52 m) from the detector loop. All conduit ends should be sealed with a waterproof sealant to prevent the entrance of contaminants into the handhole.

Steel cable hooks shall be coated with hot-dipped galvanization in accordance with AASHTO Specification M111. Hooks shall be a minimum of 1/2 inch (12.7 mm) diameter with two 90 degree



bends and extend into the handhole at least 6 inches (150 mm). Hooks shall be placed a minimum of 12 inches (300 mm) below the lid or lower if additional space is required.

### **Fiber Optic Tracer Cable**

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

Add the following to Article 817.03 of the Standard Specifications:

In order to trace the fiber optic cable after installation, the tracer cable shall be installed in the same conduit as the fiber optic cable in locations shown on the plans. The tracer cable shall be continuous, extended into the controller cabinet and terminated on a barrier type terminal strip mounted on the side wall of the controller cabinet. The barrier type terminal strip and tracer cable shall be clearly marked and identified. The tracer cable will be allowed to be spliced at the handholes only. All tracer cable splices shall be kept to a minimum and shall incorporate maximum lengths of cable supplied by the manufacturer. The tracer cable splice shall use a Western Union Splice soldered with resin core flux. All exposed surfaces of the solder shall be smooth. Splices shall be soldered using a soldering iron. Blow torches or other devices which oxidize copper cable shall not be allowed for soldering operations. The splice shall be covered with WCSMW 30/100 heat shrink tube, minimum length 4 inches (100 mm) and with a minimum 1 inch (25 mm) coverage over the XLP insulation, underwater grade.

Add the following to Article 817.05 of the Standard Specifications:

#### **Basis of Payment**

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

### **Grounding Cable**

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

Add to Article 817.02 (b) of the Standard Specifications:

Unless otherwise noted on the Plans, traffic signal grounding conductor shall be one conductor, #6 gauge copper, with a green color coded XLP jacket.

The traffic signal grounding conductor shall be bonded, using a Listed grounding connector (Burndy type KC/K2C, as applicable, or approved equal), to all proposed and existing traffic signal mast arm poles and traffic/pedestrian signal posts, including push button posts. The grounding conductor shall be bonded to all proposed and existing pull boxes, handhole frames and covers and other metallic enclosures throughout the traffic signal wiring system and noted herein and detailed on the plans. Bonding to existing handhole frames and covers shall be paid for separately.

Add the following to Article 817.05 of the Standard Specifications:

Basis of Payment

Grounding cable shall be measured in place for payment in foot (meter). Payment shall be at the contract unit price for ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6, 1C, which price includes all associated labor and material including grounding clamps, splicing, exothermic welds, grounding connectors, and other hardware.

**Railroad Interconnect Cable**

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

Add to Article 817.02 of the Standard Specifications:

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

Add the following to Article 817.05 of the Standard Specifications:

Basis of Payment

This work shall be paid for at the contract unit price per foot (meter) for ELECTRIC CABLE IN CONDUIT, RAILROAD, NO. 14 3C, which price shall be payment in full for furnishing, installing, and making all electrical connections in the traffic signal controller cabinet. Connections in the railroad controller cabinet shall be performed by railroad personnel.

**Maintenance of Existing Traffic Signal Installation**

Revise Section 850 of the Standard Specifications to read:

The energy charges for the operation of the traffic signal installation shall be paid for by others. Full maintenance responsibility shall start as soon as the Contractor begins any physical work on the Contract or any portion thereof.

The Contractor shall have on staff electricians with IMSA Level II certification to provide signal maintenance.

This item shall include maintenance of all traffic signal equipment at the intersection, including emergency vehicle pre-emption equipment, master controllers, uninterruptible power supply (UPS and batteries), telephone service installations, communication cables and conduits to adjacent intersections.

The maintenance shall be according to District One revised Article 801.11 and the following contained herein.

The Contractor shall check all controllers every two (2) weeks, which will include visually inspecting all timing intervals, relays, detectors, and pre-emption equipment to ensure that they are functioning

properly. This item includes, as routine maintenance, all portions of emergency vehicle pre-emption equipment. The Contractor shall maintain in stock at all times a sufficient amount of materials and equipment to provide effective temporary and permanent repairs.

The Contractor shall provide immediate corrective action when any part or parts of the system fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. When repairs at a signalized intersection require that the controller be disconnected, and power is available, the Contractor shall place the traffic signal installation on flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor shall be required to place stop signs (R1-1-36) at each approach of the intersection as a temporary means of regulating traffic. The Contractor shall furnish and equip all their vehicles assigned to the maintenance of traffic signal installations with a sufficient number of stop signs as specified herein. The Contractor shall maintain a sufficient number of spare stop signs in stock at all times to replace stop signs which may be damaged or stolen.

The Contractor shall provide the Engineer with a 24 hour telephone number for the maintenance of the traffic signal installation and for emergency calls by the Engineer.

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

The Contractor shall respond to all emergency calls from the Department or others within one hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new and identical equipment. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional charge to the contract. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal installation in proper operating condition or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the State's Electrical Maintenance Contractor perform the maintenance work required. The State's Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The Contractor shall pay this bill within thirty (30) days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor. The Contractor shall allow the Electrical Maintenance Contractor to make reviews of the Existing Traffic Signal Installation that has been transferred to the Contractor for Maintenance.

#### Basis of Payment

This work shall be paid for at the contract unit price each for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION.

#### Traffic Actuated Controller

Add the following to Article 857.02 of the Standard Specifications:

Controllers shall be NEMA TS2 Type 1, Econolite ASC/2S-1000 or Eagle/Siemens M41 unless specified otherwise on the plans or elsewhere on these specifications. Only controllers supplied by one of the District One approved closed loop equipment manufacturers will be allowed. The controller shall be the most recent model and software version supplied by the manufacturer at the time of the approval. The

traffic signal controller shall provide features to inhibit simultaneous display of a circular yellow ball and a yellow arrow display. Individual load switches shall be provided for each vehicle, pedestrian, and right turn over lap phase. The controller shall prevent phases from being skipped during program changes and after all preemption events.

### **Master Controller**

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

Only controllers supplied by one of the District approved closed loop equipment manufacturers will be allowed. Only NEMA TS 2 Type 1 Eagle/Siemens and Econolite closed loop systems shall be supplied. The latest model and software version of master controller shall be supplied.

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

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

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

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

The approved manufacturer of equipment shall loan the District one master controller and two intersection controllers of the most recent models and the newest software version to be used for instructional purposes in addition to the equipment to be supplied for the Contract.

The Contractor shall arrange to install a standard voice-grade dial-up telephone line to the master controller. This shall be accomplished through the following process utilizing District One staff. This telephone line may be coupled with a DSL line and a phone filter to isolate the dial-up line. An E911 address is required.

The cabinet shall be provided with an Outdoor Network Interface for termination of the telephone service. It shall be mounted to the inside of the cabinet in a location suitable to provide access for termination of the telephone service at a later date.

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

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The cabinet shall be equipped with a 9600 baud, auto dial/auto answer modem. It shall be a US robotics 33.6K baud rate or equal.

As soon as practical or within one week after the contract has been awarded, the Contractor shall contact (via phone) the Administrative Support Manager in the District One Business Services Section at (847) 705-4011 to request a phone line installation.

A follow-up fax transmittal to the Administrative Support Manager (847-705-4712) with all required information pertaining to the phone installation is required from the Contractor as soon as possible or within one week after the initial request has been made. A copy of this fax transmittal must also be faxed by the Contractor to the Traffic Signal Systems Engineer at (847) 705-4089. The required information to be supplied on the fax shall include (but not limited to): A street address for the new traffic signal controller (or nearby address); a nearby existing telephone number; what type of telephone service is needed; the name and number of the Contractor's employee for the telephone company to contact regarding site work and questions.

The usual time frame for the activation of the phone line is 4-6 weeks after the Business Services Section has received the Contractor supplied fax. It is, therefore, imperative that the phone line conduit and pull-string be installed by the Contractor in anticipation of this time frame. On jobs which include roadway widening in which the conduit cannot be installed until this widening is completed, the Contractor will be allowed to delay the phone line installation request to the Business Services Section until a point in time that is 4-6 weeks prior to the anticipated completion of the traffic signal work. The contractor shall provide the Administrative Support Manager with an expected installation date considering the 4-6 week processing time.

The telephone line shall be installed and activated one month before the system final inspection.

All costs associated with the telephone line installation and activation (not including the Contract specified conduit installation between the point of telephone service and the traffic signal controller cabinet) shall be paid for by the District One Business Services Section (i.e., this will be an IDOT phone number not a Contractor phone number).

### **Fiber Optic Cable**

Add the following to Articles 871.01, 872.02, 871.04, and 871.05 of the Standard Specifications:

This work shall consist of furnishing and installing Fiber Optical cable in conduit with all accessories and connectors according to Section 871 of the Standard Specifications. The cable shall be of the type, size, and the number of fiber specified.

The control cabinet distribution enclosure shall be CSC FTWO12KST-W/O 12 Port Fiber Wall Enclosure or an approved equivalent. The fiber optic cable shall provide six fibers per tube for the amount of fibers called for in the Fiber Optic Cable pay item in the Contract. A minimum of six multimode fibers from each cable shall be terminated with approved mechanical connectors at the distribution enclosure. Fibers not being used shall be labeled "spare." Fibers not attached to the distribution enclosure shall be capped and sealed. A minimum of 13.0 feet (4m) of extra cable length shall be provided for the controller cabinet. The controller cabinet extra cable length shall be stored as directed by the Engineer.

Fiber Optic cable may be gel filled or have an approved water blocking tape.

Basis of Payment

The work shall be paid for at the contract unit price for FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F, per foot (meter) for the cable in place, including distribution enclosure and all connectors.

**Concrete Foundations**

Add the following to Article 878.03 of the Standard Specifications:

All anchor bolts shall be according to Article 1006.09, except all anchor bolts shall be hot dipped galvanized the full length of the anchor bolt including the hook.

Concrete Foundations, Type "A" for Traffic Signal Posts shall provide anchor bolts with the bolt pattern specified within the "District One Standard Traffic Signal Design Details." All Type "A" foundations shall be a minimum depth of 48 inches (1.22 m).

Concrete Foundations, Type "C" for Traffic Signal Cabinets with Uninterruptible Power Supply (UPS) cabinet installations shall be a minimum of 48 inches (1.22 m) long and 31 inches (790 mm) wide. All Type "C" foundations shall be a minimum depth of 48 inches (1.22 m). An integral concrete pad to support the UPS cabinet shall be constructed a minimum of 20 inches (510 mm) long and a minimum depth of 10 inches (250 mm). The concrete apron in front of the Type IV or V cabinet shall be 36 in. x 48 in. x 5 in. (910 mm X 1220 mm X 130 mm). The concrete apron in front of the UPS cabinet shall be 36 in. x 31 in. x 5 in. (910 mm X 790 mm X 130 mm). Anchor bolts shall provide bolt spacing as required by the manufacturer.

Concrete Foundations, Type "D" for Traffic Signal Cabinets shall be a minimum of 48 inches (1.22 m) long and 31 inches (790 mm) wide. All Type "D" foundations shall be a minimum depth of 48 inches (1.22 m). The concrete apron shall be 36 in. x 48 in. x 5 in. (910 mm X 1220 mm X 130 mm). Anchor bolts shall provide bolt spacing as required by the manufacturer.

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

Table 1

DESIGN TABLE FOR MAST ARM FOUNDATIONS

MAST ARM LENGTH	FOUNDATION DEPTH*	FOUNDATION DIAMETER	SPIRAL DIAMETER	QUANTITY OF NO. 15 (NO. 5) BARS
Less than 9.1m (30')	10'-0" (3.0m)	30" (750mm)	24" (600mm)	8
Greater than or equal to 9.1m (30') and less than 12.2m (40')	13'-6" (4.1m)	30" (750mm)	24" (600mm)	8
	11'-0" (3.4m)	36" (900mm)	30" (750mm)	12
Greater than or equal to 12.2m (40') and less than 15.2m (50')	13'-0" (4.0m)	36" (900mm)	30" (750mm)	12
Greater than or equal to 15.2m (50') and up to 16.8m (55')	15'-0" (4.6m)	36" (900mm)	30" (750mm)	12

Foundation depths specified are for sites which have cohesive soils (clayey, silt, sandy clay, etc.) along the length of the shaft, with an average Unconfined Compressive strength of (Qu)>1.0 tsf (100kPa). This strength shall be verified by boring data prior to construction or with testing by the Engineer during foundation drilling. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.

Concrete Foundations, Type "E" for Combination Mast Arm Poles shall be 36 inch (900 mm) diameter, regardless of mast arm length. Foundations used for Combination Mast Arm Poles shall provide an extra 2-1/2 inch (65 mm) raceway.

No foundation is to be poured until the Resident Engineer gives his/her approval as to the depth of the foundation.

**Detector Loop**

Revise Section 886 of the Standard Specifications to read:

A minimum of seven (7) working days prior to the Contractor cutting loops, the Contractor shall have the proposed loop locations marked and contact the Area Traffic Signal Maintenance and Operations Engineer (847) 705-4424 to inspect and approve the layout. When preformed detector loops are installed, the Contractor shall have them inspected and approved prior to the pouring of the Portland cement concrete surface, using the same notification process as above.

Loop detectors shall be installed according to the requirements of the "District One Standard Traffic Signal Design Details." Saw-cuts (homeruns on preformed detector loops) from the loop to the edge of pavement shall be made perpendicular to the edge of pavement when possible in order to minimize the length of the saw-cut (homerun on preformed detector loops) unless directed otherwise by the Engineer or as shown on the plan.

The detector loop cable insulation shall be labeled with the cable specifications.

Each loop detector lead-in wire shall be labeled in the handhole using a Panduit 250W175C water proof tag, or an approved equal, secured to each wire with nylon ties.

Resistance to ground shall be a minimum of 100 mega-ohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries. Quality readings shall be more than 5.

Type I. All loops installed in new asphalt pavement shall be installed in the binder course and not in the surface course. The edge of pavement, curb and handhole shall be cut with a 1/4 inch (6.3 mm) deep x 4 inches (100 mm) saw cut to mark location of each loop lead-in.

Loop sealant shall be a two-component thixotropic chemically cured polyurethane either Chemque Q-Seal 295, Percol Elastic Cement A/C Grade or an approved equal. The sealant shall be installed 1/8 inch (3 mm) below the pavement surface, if installed above the surface the overlap shall be removed immediately.

Detector loop measurements shall include the saw cut and the length of the loop lead-in to the edge of pavement. The lead-in wire, including all necessary connections for proper operations, from the edge of pavement to the handhole, shall be included in the price of the detector loop. Unit duct, trench and backfill, and drilling of pavement or handholes shall be included in detector loop quantities.

Preformed. This work shall consist of furnishing and installing a rubberized heat resistant preformed traffic signal loop in accordance with the Standard Specifications, except for the following:

Preformed detector loops shall be installed in new pavement constructed of Portland cement concrete using mounting chairs or tied to re-bar or the preformed detector loops may be placed in the sub-base. Loop lead-ins shall be extended to a temporary enclosure near the proposed handhole location with ends capped and sealed against moisture and other contaminants.

Handholes shall be placed next to the shoulder or back of curb when preformed detector loops enter the handhole. Non-metallic coilable duct, included in this pay item, shall be used to protect the preformed lead-ins from back of curb to the handhole.

Preformed detector loops shall be factory assembled. Homeruns and interconnects shall be pre-wired and shall be an integral part of the loop assembly. The loop configurations and homerun lengths shall be assembled for the specific application. The loop and homerun shall be constructed using 11/16 inch (17.2 mm) outside diameter (minimum), 3/8 inch (9.5 mm) inside diameter (minimum) Class A oil resistant synthetic cord reinforced hydraulic hose with 250 psi (1,720 kPa) internal pressure rating. Hose for the loop and homerun assembly shall be one continuous piece. No joints or splices shall be allowed in the hose except where necessary to connect homeruns or interconnects to the loops. This will provide maximum wire protection and loop system strength. Hose tee connections shall be heavy duty high temperature synthetic rubber. The tee shall be of proper size to attach directly to the hose, minimizing glue joints. The tee shall have the same flexible properties as the hose to insure that the whole assembly can conform to pavement movement and shifting without cracking or breaking. The wire used shall be #16 THWN stranded copper. The number of turns in the loop shall be application specific. Homerun wire pairs shall be twisted a minimum of four



turns per foot. No wire splices will be allowed in the preformed loop assembly. The loop and homeruns shall be filled and sealed with a flexible sealant to insure complete moisture blockage and further protect the wire. The preformed loops shall be constructed to allow a minimum of 6.5 feet of extra cable in the handhole.

Basis of Payment

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

Emergency Vehicle Priority System

Revise Section 887 of the Standard Specifications to read:

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

All new installations shall be equipped with Confirmation Beacons as shown on the "District One Standard Traffic Signal Design Details." The Confirmation Beacon shall consist of a 6 watt Par 38 LED flood lamp with a 30 degree light spread, maximum 6 watt energy consumption at 120V, and a 2,000 hour warranty for each direction of pre-emption. The lamp shall have an adjustable mount with a weatherproof enclosure for cable splicing. All hardware shall be cast aluminum or stainless steel. Holes drilled into signal poles, mast arms, or posts shall require rubber grommets. In order to maintain uniformity between communities, the confirmation beacons shall indicate when the control equipment receives the pre-emption signal. The pre-emption movement shall be signaled by a flashing indication at the rate specified by Section 4D-11 of the "Manual on Uniform Traffic Control Devices." The stopped pre-empted movements shall be signaled by a continuous indication.

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

Basis of Payment

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

## **Re-Optimize Traffic Signal System**

### **Description**

This work shall consist of re-optimizing a closed loop traffic signal system according to the following Levels of work.

LEVEL I applies when improvements are made to an existing signalized intersection within an existing closed loop traffic signal system. The purpose of this work is to integrate the improvements to the subject intersection into the signal system while minimizing the impacts to the existing system operation. This type of work would be commonly associated with the addition of signal phases, pedestrian phases, or improvements that do not affect the capacity at an intersection.

LEVEL II applies when improvements are made to an existing signalized intersection within an existing closed loop traffic signal system and detailed analysis of the intersection operation is desired by the engineer, or when a new signalized or existing signalized intersection is being added to an existing system, but optimization of the entire system is not required. The purpose of this work is to optimize the subject intersection, while integrating it into the existing signal system with limited impact to the system operations. This item also includes an evaluation of the overall system operation, including the traffic responsive program.

For the purposes of re-optimization work, an intersection shall include all traffic movements operated by the subject controller and cabinet.

After the signal improvements are completed, the signal shall be re-optimized as specified by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants. Traffic signal system optimization work, including fine-tuning adjustments of the optimized system, shall follow the requirements stated in the most recent IDOT District 1 SCAT Guidelines, except as note herein.

A listing of existing signal equipment, interconnect information, phasing data, and timing patterns may be obtained from the Department, if available and as appropriate. The existing SCAT Report is available for review at the District One office and if the Consultant provides blank computer disks, copies of computer simulation files for the existing optimized system and a timing database that includes intersection displays will be made for the Consultant. The Consultant shall confer with the Traffic Signal Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system, in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the optimization.

### **(a) LEVEL I Re-Optimization**

1. The following tasks are associated with LEVEL I Re-Optimization.
  - a. Appropriate signal timings shall be developed for the subject intersection and existing timings shall be utilized for the rest of the intersections in the system.
  - b. Proposed signal timing plan for the new or modified intersection(s) shall be forwarded to IDOT for review prior to implementation.

- c. Consultant shall conduct on-site implementation of the timings at the turn-on and make fine-tuning adjustments to the timings of the subject intersection in the field to alleviate observed adverse operating conditions and to enhance operations.
2. The following deliverables shall be provided for LEVEL I Re-Optimization.
    - a. Consultant shall furnish to IDOT a cover letter describing the extent of the re-optimization work performed.
    - b. Consultant shall furnish an updated intersection graphic display for the subject intersection to IDOT and to IDOT's Traffic Signal Maintenance Contractor.
- (b) LEVEL II Re-Optimization
1. In addition to the requirements described in the LEVEL I Re-Optimization above, the following tasks are associated with LEVEL II Re-Optimization.
    - a. Traffic counts shall be taken at the subject intersection after the traffic signals are approved for operation by the Area Traffic Signal Operations Engineer. Manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m., and 3:30 p.m. to 6:30 p.m. on a typical weekday from midday Monday to midday Friday. The turning movement counts shall identify cars, and single-unit, multi-unit heavy vehicles, and transit buses.
    - b. As necessary, the intersections shall be re-addressed and all system detectors reassigned in the master controller according to the current standard of District One.
    - c. Traffic responsive program operation shall be evaluated to verify proper pattern selection and lack of oscillation and a report of the operation shall be provided to IDOT.
  2. The following deliverables shall be provided for LEVEL II Re-Optimization.
    - a. Consultant shall furnish to IDOT one (1) copy of a technical memorandum for the optimized system. The technical memorandum shall include the following elements:
      - (1) Brief description of the project
      - (2) Printed copies of the analysis output from Synchro (or other appropriate, approved optimization software file)
      - (3) Printed copies of the traffic counts conducted at the subject intersection
    - b. Consultant shall furnish to IDOT two (2) CDs for the optimized system. The CDs shall include the following elements:
      - (1) Electronic copy of the technical memorandum in PDF format
      - (2) Revised Synchro files (or other appropriate, approved optimization software file) including the new signal and the rest of the signals in the closed loop system
      - (3) Traffic counts conducted at the subject intersection
      - (4) New or updated intersection graphic display file for the subject intersection
      - (5) The CD shall be labeled with the IDOT system number and master location, as well as the submittal date and the consultant logo. The CD case shall include a clearly readable label displaying the same information securely affixed to the side and front.

Basis of Payment

This work shall be paid for at the contract unit price each for RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM – LEVEL I or RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM – LEVEL II, which price shall be

payment in full for performing all work described herein per intersection. Following completion of the timings and submittal of specified deliverables, 100 percent of the bid price will be paid.

### **Optimize Traffic Signal System**

#### **Description**

This work shall consist of optimizing a closed loop traffic signal system.

OPTIMIZE TRAFFIC SIGNAL SYSTEM applies when a new or existing closed loop traffic signal system is to be optimized and a formal Signal Coordination and Timing (SCAT) Report is to be prepared. The purpose of this work is to improve system performance by optimizing traffic signal timings, developing a time of day program and a traffic responsive program.

After the signal improvements are completed, the signal system shall be optimized as specified by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants. Traffic signal system optimization work, including fine-tuning adjustments of the optimized system, shall follow the requirements stated in the most recent IDOT District 1 SCAT Guidelines, except as note herein.

A listing of existing signal equipment, interconnect information, phasing data, and timing patterns may be obtained from the Department, if available and as appropriate. The existing SCAT Report is available for review at the District One office and if the Consultant provides blank computer disks, copies of computer simulation files for the existing optimized system and a timing database that includes intersection displays will be made for the Consultant. The Consultant shall confer with the Traffic Signal Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system, in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the optimization.

- (a) The following tasks are associated with OPTIMIZE TRAFFIC SIGNAL SYSTEM.
1. Appropriate signal timings and offsets shall be developed for each intersection and appropriate cycle lengths shall be developed for the closed loop signal system.
  2. Traffic counts shall be taken at all intersections after the permanent traffic signals are approved for operation by the Area Traffic Signal Operations Engineer. Manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m., and 3:30 p.m. to 6:30 p.m. on a typical weekday from midday Monday to midday Friday. The turning movement counts shall identify cars, and single-unit and multi-unit heavy vehicles.
  3. As necessary, the intersections shall be re-addressed and all system detectors reassigned in the master controller according to the current standard of District One.
  4. A traffic responsive program shall be developed, which considers both volume and occupancy. A time-of-day program shall be developed for used as a back-up system.
  5. Proposed signal timing plan for the new or modified intersection shall be forwarded to IDOT for review prior to implementation.

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6. Consultant shall conduct on-site implementation of the timings and make fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
  7. Speed and delay studies shall be conducted during each of the count periods along the system corridor in the field before and after implementation of the proposed timing plans for comparative evaluations. These studies should utilize specialized electronic timing and measuring devices.
- (b) The following deliverables shall be provided for OPTIMIZE TRAFFIC SIGNAL SYSTEM.
1. Consultant shall furnish to IDOT one (1) copy of a SCAT Report for the optimized system. The SCAT Report shall include the following elements:

<p><b>Cover Page in color showing a System Map</b></p> <p><b>Figures</b></p> <ol style="list-style-type: none"> <li>1. System overview map – showing system number, system schematic map with numbered system detectors, oversaturated movements, master location, system phone number, cycle lengths, and date of completion.</li> <li>2. General location map in color – showing signal system location in the metropolitan area.</li> <li>3. Detail system location map in color – showing cross street names and local controller addresses.</li> <li>4. Controller sequence – showing controller phase sequence diagrams.</li> </ol>
<p><b>Table of Contents</b></p> <p><b>Tab 1: Final Report</b></p> <ol style="list-style-type: none"> <li>1. Project Overview</li> <li>2. System and Location Description (Project specific)</li> <li>3. Methodology</li> <li>4. Data Collection</li> <li>5. Data Analysis and Timing Plan Development</li> <li>6. Implementation       <ol style="list-style-type: none"> <li>a. Traffic Responsive Programming (Table of TRP vs. TOD Operation)</li> </ol> </li> <li>7. Evaluation       <ol style="list-style-type: none"> <li>a. Speed and Delay runs</li> </ol> </li> </ol>
<p><b>Tab 2. Turning Movement Counts</b></p> <ol style="list-style-type: none"> <li>1. Turning Movement Counts (Showing turning movement counts in the intersection diagram for each period, including truck percentage)</li> </ol>
<p><b>Tab 3. Synchro Analysis</b></p> <ol style="list-style-type: none"> <li>1. AM: Time-Space diagram in color, followed by intersection Synchro report (Timing report) summarizing the implemented timings.</li> <li>2. Midday: same as AM</li> <li>3. PM: same as AM</li> </ol>
<p><b>Tab 4: Speed and Delay Studies</b></p> <ol style="list-style-type: none"> <li>1. Summary of before and after runs results in two (2) tables showing travel time and delay time.</li> <li>2. Plot of the before and after runs diagram for each direction and time period.</li> </ol>
<p><b>Tab 5: Electronic Files</b></p> <ol style="list-style-type: none"> <li>1. Two (2) CDs for the optimized system. The CDs shall include the following elements:       <ol style="list-style-type: none"> <li>a. Electronic copy of the SCAT Report in PDF format</li> <li>b. Copies of the Synchro files for the optimized system</li> <li>c. Traffic counts for the optimized system</li> <li>d. New or updated intersection graphic display files for each of the system intersections and the system graphic display file including system detector locations and addresses.</li> </ol> </li> </ol>

Basis of Payment

The work shall be paid for at the contract unit each for OPTIMIZE TRAFFIC SIGNAL SYSTEM, which price shall be payment in full for performing all work described herein for the entire traffic signal system. Following the completion of traffic counts, 25 percent of the bid price will be paid. Following the completion of the Synchro analysis, 25 percent of the bid price will be paid. Following the setup and fine tuning of the timings, the speed-delay study, and the TRP programming, 25 percent of the bid price will be paid. The remaining 25 percent will be paid when the system is working to the satisfaction of the engineer and the report and CD have been submitted.

**Temporary Traffic Signal Timings**

Description

This work shall consist of developing and maintaining appropriate traffic signal timings for the specified intersection for the duration of the temporary signalized condition.

All timings and adjustments necessary for this work shall be performed by an approved Consultant who has previous experience in optimizing Closed Loop Traffic signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants.

The following tasks are associated with TEMPORARY TRAFFIC SIGNAL TIMINGS.

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

Basis of Payment

The work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL TIMINGS, which price shall be payment in full for performing all work described herein per intersection. When the temporary traffic signal installation is turned on, 50 percent of the bid price will be paid. The remaining 50 percent of the bid price will be paid following the removal of the temporary traffic signal installation.

## **Temporary Traffic Signal Installation**

Revise Section 890 of the Standard Specifications to read:

### **General**

Only an approved equipment vendor will be allowed to assemble the temporary traffic signal cabinet. Also, an approved equipment vendor shall assemble and test a temporary railroad traffic signal cabinet. (Refer to the "Inspection of Controller and Cabinet" specification). A representative of the approved control equipment vendor shall be present at the temporary traffic signal turn-on inspection.

### **Construction Requirements**

#### **(a) Controllers**

1. Only controllers supplied by one of the District approved closed loop equipment manufacturers will be approved for use at temporary signal locations. All controllers used for temporary traffic signals shall be fully actuated NEMA microprocessor based with RS232 data entry ports compatible with existing monitoring software approved by IDOT District 1, installed in NEMA TS1 or TS2 cabinets with 8 phase back panels, capable of supplying 255 seconds of cycle length and individual phase length settings up to 99 seconds. On projects with one lane open and two way traffic flow, such as bridge deck repairs, the temporary signal controller shall be capable of providing an adjustable all red clearance setting of up to 30 seconds in length. All controllers used for temporary traffic signals shall meet or exceed the requirements of Section 857 of the Standard Specifications with regards to internal time base coordination and preemption.
2. All control equipment for the temporary traffic signal(s) shall be furnished by the Contractor unless otherwise stated in the plans. On projects with multiple temporary traffic signal installations, all controllers shall be the same manufacturer brand and model number with current software installed.

(b) Cabinets. All temporary traffic signal cabinets shall have a closed bottom made of aluminum alloy. The bottom shall be sealed along the entire perimeter of the cabinet base to ensure a water, dust and insect-proof seal. The bottom shall provide a minimum of two (2) 4 inch (100 mm) diameter holes to run the electric cables through. The 4 inch (100 mm) diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.

(c) Grounding. Grounding shall be provided for the temporary traffic signal cabinet meeting or exceeding the applicable portions of the National Electrical Code, Section 807 of the Standard Specifications and shall meet the requirements of the District 1 Traffic Signal Specifications for "Grounding of Traffic Signal Systems".

(d) Traffic Signal Heads. All traffic signal sections and pedestrian signal sections shall be 12 inches (300 mm). Traffic signal sections shall be LED with expandable view, unless otherwise approved by the Engineer. The temporary traffic signal heads shall be placed as indicated on the temporary traffic signal plan or as directed by the Engineer. The Contractor shall furnish enough extra cable length to relocate heads to any position on the span wire or at locations illustrated on the plans for construction staging. The temporary traffic signal shall



remain in operation during all signal head relocations. Each temporary traffic signal head shall have its own cable from the controller cabinet to the signal head.

(e) Interconnect

1. Temporary traffic signal interconnect shall be provided using fiber optic cable or wireless interconnect technology as specified in the plans. The Contractor may request, in writing, to substitute the fiber optic temporary interconnect indicated in the contract documents with a wireless interconnect. The Contractor must provide assurances that the radio device will operate properly at all times and during all construction staging. If approved for use by the Engineer, the Contractor shall submit marked-up traffic signal plans indicating locations of radios and antennas and installation details. If wireless interconnect is used, and in the opinion of the engineer, it is not viable, or if it fails during testing or operations, the Contractor shall be responsible for installing all necessary poles, fiber optic cable, and other infrastructure for providing temporary fiber optic interconnect at no cost to the contract.
2. The existing system interconnect and phone lines are to be maintained as part of the Temporary Traffic Signal Installation specified for on the plan. The interconnect shall be installed into the temporary controller cabinet as per the notes or details on the plans. All labor and equipment required to install and maintain the existing interconnect as part of the Temporary Traffic Signal Installation shall be included in the item Temporary Traffic Signal Installation. When shown in the plans, temporary traffic signal interconnect equipment shall be furnished and installed. The temporary traffic signal interconnect shall maintain interconnect communications throughout the entire signal system for the duration of the project.
3. Temporary wireless interconnect, compete. The radio interconnect system shall be compatible with Eagle or Econolite controller closed loop systems. This item shall include all materials, labor and testing to provide the completely operational closed loop system as shown on the plans. The radio interconnect system shall include the following components:
  - a. Rack or Shelf Mounted RS-232 Frequency Hopping Spread Spectrum (FHSS) Radio
  - b. Software for Radio Configuration (Configure Frequency and Hopping Patterns)
  - c. Antennas (Omni Directional or Yagi Directional)
  - d. Antenna Cables, LMR400, Low Loss. Max. 100-ft from controller cabinet to antenna
  - e. Brackets, Mounting Hardware, and Accessories Required for Installation
  - f. RS232 Data Cable for Connection from the radio to the local or master controller
  - g. All other components required for a fully functional radio interconnect system

All controller cabinet modifications and other modifications to existing equipment that are required for the installation of the radio interconnect system components shall be included in this item.

The radio interconnect system may operate at 900Mhz (902-928) or 2.4 Ghz depending on the results of a site survey. The telemetry shall have an acceptable rate of transmission errors, time outs, etc. comparable to that of a hardwire system.

The proposed master controller and telemetry module shall be configured for use with the radio interconnect at a minimum rate of 9600 baud.

The radio interconnect system shall include all other components required for a complete and fully functional telemetry system and shall be installed in accordance to the manufacturers recommendations.

The following radio equipment is currently approved for use in Region One/District One: Encon Model 5100 and Intuicom Communicator II.

- (f) Emergency Vehicle Pre-Emption. All emergency vehicle preemption equipment (light detectors, light detector amplifiers, confirmation beacons, etc.) as shown on the temporary traffic signal plans shall be provided by the Contractor. It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle preemption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency. All light operated systems shall operate at a uniform rate of  $14.035 \text{ hz} \pm 0.002$ , or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the District. All labor and material required to install and maintain the Emergency Vehicle Preemption installation shall be included in the item Temporary Traffic Signal Installation.
- (g) Vehicle Detection. All temporary traffic signal installations shall have vehicular detection installed as shown on the plans or as directed by the Engineer. Pedestrian push buttons shall be provided for all pedestrian signal heads/phases as shown on the plans or as directed by the Engineer. All approaches shall have vehicular detection provided by Video Vehicle Detection System as shown on the plans or as directed by the Engineer. The microwave vehicle sensor or video vehicle detection system shall be approved by IDOT before furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the microwave vehicle sensor or video vehicle detection system in accordance to the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the microwave vehicle sensor or video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project. A representative of the approved control equipment vendor shall be present and assist the contractor in setting up and maintaining the microwave vehicle sensor or video vehicle detection system. An in-cabinet video monitor shall be provided with all video vehicle detection systems and shall be included in the item Temporary Traffic Signal Installation.
- (h) Signs. All existing street name and intersection regulatory signs shall be removed from existing poles and relocated to the temporary signal span wire. If new mast arm assembly and pole(s) and posts are specified for the permanent signals, the signs shall be relocated to the new equipment at no extra cost.

- (i) Energy Charges. The electrical utility energy charges for the operation of the traffic signal installation shall be paid for by others if the installation replaces an existing signal. Otherwise charges shall be paid for under 109.05 of the Standard Specifications.
- (j) Maintenance. Maintenance shall meet the requirements of the Traffic Specifications and District Specifications for "Maintenance of Existing Traffic Signal Installation." Maintenance of temporary signals and of the existing signals shall be included to the cost of this item. When temporary traffic signals are to be installed at locations where existing signals are presently operating, the Contractor shall be fully responsible for the maintenance of the existing signal installation as soon as he begins any physical work on the Contract or any portion thereof. Maintenance responsibility of the existing signals shall be included to the item Temporary Traffic Signal Installation(s). In addition, a minimum of seven (7) days prior to assuming maintenance of the existing traffic signal installation(s) under this Contract, the Contractor shall request that the Resident Engineer contact the Bureau of Traffic (847) 705-4424 for an inspection of the installation(s).
- (k) Temporary Traffic Signals for Bridge Projects. Temporary Traffic Signals for bridge projects shall follow the State Standards, Standard Specifications, District 1 Traffic Signal Specifications and any plans for Bridge Temporary Traffic Signals included in the plans. The installation shall meet the above requirements for "Temporary Traffic Signal Installation". In addition all electric cable shall be aurally suspended, at a minimum height of 18 feet (5.5m), on temporary wood poles (Class 5 or better) of 45 feet (13.7 m), minimum height. The signal heads shall be span wire mounted or bracket mounted to the wood pole or as directed by the Engineer. The Controller cabinet shall be mounted to the wood pole or as directed by the Engineer. Microwave vehicle sensors or video vehicle detection may be used in place of the detector loops as approved by the Engineer.
- (l) Temporary Portable Traffic Signal for Bridge Projects
  1. Unless otherwise directed by the Engineer, temporary portable traffic signals shall be restricted to use on roadways of less than 8000 ADT that have limited access to electric utility service, shall not be installed on projects where the estimated need exceeds ten (10) weeks, and shall not be in operation during the period of November through March. The Contractor shall replace the temporary portable traffic signals with temporary span wire traffic signals noted herein at no cost to the contract if the bridge project or Engineer requires temporary traffic signals to remain in operation into any part of period of November through March. If, in the opinion of the engineer, the reliability and safety of the temporary portable traffic signal is not similar to that of a temporary span wire traffic signal installation, the Contractor shall replace the temporary portable traffic signals with temporary span wire traffic signals noted herein at no cost to the contract.
  2. The controller and LED signal displays shall meet the above requirements for "Temporary Traffic Signal Installation".
  3. Work shall be according to Article 701.18(b) of the Standard Specifications except as noted herein.

4. General

- a. The temporary portable bridge traffic signals shall be trailer-mounted units. The trailer-mounted units shall be set up securely and level. Each unit shall be self-contained and consist of two signal heads. The left signal head shall be mounted on a mast arm capable of extending over the travel lane. Each unit shall contain a solar cell system to facilitate battery charging. There shall be a minimum of 12 days backup reserve battery supply and the units shall be capable of operating with a 120 V power supply from a generator or electrical service.
- b. All signal heads located over the travel lane shall be mounted at a minimum height of 17 feet (5m) from the bottom of the signal back plate to the top of the road surface. All far right signal heads located outside the travel lane shall be mounted at a minimum height of 8 feet (2.5m) from the bottom of the signal back plate to the top of the adjacent travel lane surface.
- c. The long all red intervals for the traffic signal controller shall be adjustable up to 250 seconds in one-second increments.
- d. As an alternative to detector loops, temporary portable bridge traffic signals may be equipped with microwave sensors or other approved methods of vehicle detection and traffic actuation.
- e. All portable traffic signal units shall be interconnected using hardwire communication cable. Radio communication equipment may be used only with the approval of the Engineer. If radio communication is used, a site analysis shall be completed to ensure that there is no interference present that would affect the traffic signal operation. The radio equipment shall meet all applicable FCC requirements.
- f. The temporary portable bridge traffic signal system shall meet the physical display and operational requirements of conventional traffic signals as specified in Part IV of the Manual on Uniform Traffic Control Devices (MUTCD). The signal system shall be designed to continuously operate over an ambient temperature range between -30 °F (-34 °C) and 120 °F (48 °C). When not being utilized to inform and direct traffic, portable signals shall be treated as nonoperating equipment according to Article 701.11.
- g. Basis of Payment. This work will be paid for according to Article 701.20(c).

Basis of Payment

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

### **Remove Existing Traffic Signal Equipment**

Add the following to Article 895.05 of the Standard Specifications:

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

All equipment to be returned to the State shall be delivered by the Contractor to the State's Traffic Signal Maintenance Contractor's main facility. The Contractor shall contact the State's Electrical Maintenance Contractor to schedule an appointment to deliver the equipment. No equipment will be accepted without a prior appointment. All equipment shall be delivered within 30 days of removing it from the traffic signal installation. The Contractor shall provide 5 copies of a list of equipment that is to remain the property of the State, including model and serial numbers, where applicable. He shall also provide a copy of the Contract plan or special provision showing the quantities and type of equipment. Controllers and peripheral equipment from the same location shall be boxed together (equipment from different locations may not be mixed) and all boxes and controller cabinets shall be clearly marked or labeled with the location from which they were removed. If equipment is not returned with these requirements, it will be rejected by the State's Electrical Maintenance Contractor. The Contractor shall be responsible for the condition of the traffic signal equipment from the time he takes maintenance of the signal installation until the acceptance of a receipt drawn by the State's Electrical Maintenance Contractor indicating the items have been returned in good condition.

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

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

### **Traffic Signal Painting**

#### Description

This work shall include surface preparation, powder type painted finish application and packaging of new galvanized steel traffic signal mast arm poles and posts assemblies. All work associated with applying the painted finish shall be performed at the manufacturing facility for the pole assembly or post or at a painting facility approved by the Engineer. Traffic signal mast arm shrouds and post bases shall also be painted the same color as the pole assemblies and posts.

#### Surface Preparation

All weld flux and other contaminates shall be mechanically removed. The traffic mast arms and post assemblies shall be degreased, cleaned, and air dried to assure all moisture is removed.

#### Painted Finish

All galvanized exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a dry film thickness of 2.0 mils. Prior to application, the surface shall be mechanically etched by brush blasting (Ref. SSPC-SP7) and the zinc coated substrate preheated to 450

degrees F for a minimum one (1) hour. The coating shall be electrostatically applied and cured by elevating the zinc-coated substrate temperature to a minimum of 400 degrees F.

The finish paint color shall be one of the manufacturer's standard colors and shall be as selected by the local agency responsible for paint costs. The Contractor shall confirm, in writing, the color selection with the local responsible agency and provide a copy of the approval to the Engineer and a copy of the approval shall be included in the material catalog submittal.

Traffic signal heads, pedestrian signal heads and controller cabinets are not included in this pay item.

Any damage to the finish after leaving the manufacturer's facility shall be repaired to the satisfaction of the Engineer using a method approvable by the Engineer and manufacturer. If while at the manufacturer's facility the finish is damaged, the finish shall be re-applied.

#### Warranty

The Contractor shall furnish in writing to the Engineer, the paint manufacturer's standard warranty and certification that the paint system has been properly applied.

#### Packaging

Prior to shipping, the poles and posts shall be wrapped in ultraviolet-inhibiting plastic foam or rubberized foam.

#### Basis of Payment

This work shall be paid for at the contract unit price each for PAINT NEW MAST ARM POLE, UNDER 40 FEET (12.19 METER); PAINT NEW MAST ARM POLE, 40 FEET (12.19 METER) AND OVER; PAINT NEW COMBINATION MAST ARM POLE, UNDER 40 FEET (12.19 METER); PAINT NEW COMBINATION MAST ARM POLE, 40 FEET (12.19 METER) AND OVER; or TRAFFIC SIGNAL POST of any height, which shall be payment in full for painting and packaging the traffic signal mast arm poles and posts described above including all shrouds, bases and appurtenances.

## **DIVISION 1000 MATERIALS**

### **Pedestrian Push-Button**

Revise Article 1074.02 of the Standard Specifications to read:

- (a) General. Push-button assemblies shall be ADA compliant, highly vandal resistant, be pressure activated with minimal movement and cannot be stuck in a closed or constant call position. A red LED and audible tone shall be provided for confirmation of an actuation call.
- (b) Housing. The push-button housing shall be solid 6061 aluminum and powder coated yellow, unless otherwise noted on the plans.
- (c) Actuator. The actuator shall be stainless steel with a solid state electronic Piezo switch rated for a minimum of 20 million cycles with no moving plunger or moving electrical contacts. The operating voltage shall be 12-24 V AC/DC.
- (d) Pedestrian Station. Stations shall be designed to be mounted directly to a post, mast arm pole or wood pole. The station shall be aluminum and accept a 3-inch round push button assembly and 5 X 7 ¼ -inch R10-3b or R10-3d sign. A larger station will be necessary to accommodate the sign, R10-3e, for a count-down pedestrian signal.

### **Controller Cabinet and Peripheral Equipment**

Add the following to Article 1074.03 of the Standard Specifications:

- (a) Cabinets shall be designed for NEMA TS2 Type 1 operation. All cabinets shall be pre-wired for a minimum of eight (8) phases of vehicular, four (4) phases of pedestrian and four (4) phases of overlap operation.
- (b)(5) Cabinets – Provide 1/8" (3.2 mm) thick unpainted aluminum alloy 5052-H32. The surface shall be smooth, free of marks and scratches. All external hardware shall be stainless steel.
- (b)(6) Controller Harness – Provide a TS2 Type 2 "A" wired harness in addition to the TS2 Type 1 harness.
- (b)(7) Surge Protection – EDCO Model 1210 IRS with failure indicator.
- (b)(8) BIU – Containment screw required.
- (b)(9) Transfer Relays – Solid state or mechanical flash relays are acceptable.
- (b)(10) Switch Guards – All switches shall be guarded.
- (b)(11) Heating – Two (2) porcelain light receptacles with cage protection controlled by both a wall switch and a thermostat or a thermostatically controlled 150 watt strip heater.
- (b)(12) Plan & Wiring Diagrams – 12" x 16" (3.05mm x 4.06mm) moisture sealed container attached to door.
- (b)(13) Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle pre-emption and sixteen channels (16) of vehicular operation.
- (b)(14) Field Wiring Labels – All field wiring shall be labeled.
- (b)(15) Field Wiring Termination – Approved channel lugs required.
- (b)(16) Power Panel – Provide a nonconductive shield.
- (b)(17) Circuit Breaker – The circuit breaker shall be sized for the proposed load but shall not be

rated less than 30 amps.

- (b) (18) Police Door – Provide wiring and termination for plug in manual phase advance switch.
- (b) (19) Railroad Pre-Emption Test Switch – Eaton 8830K13 SHA 1250 or equivalent.

### **Railroad, Full-Actuated Controller and Cabinet**

Add the following to Article 857.02 of the Standard Specifications:

Controller shall comply with Article 1073.01 as amended in these Traffic Signal Special Provisions.

Controller Cabinet and Peripheral Equipment shall comply with Article 1074.03 as amended in these Traffic Signal Special Provisions.

Add the following to Articles 1073.01 (c) (2) and 1074.03 (a) (5) (e) of the Standard Specifications:

Controllers and cabinets shall be new and NEMA TS2 Type 1 design.

A method of monitoring and/or providing redundancy to the railroad preemptor input to the controller shall be included as a component of the Railroad, Full Actuated Controller and Cabinet installation and be verified by the traffic signal equipment supplier prior to installation.

Railroad interconnected controllers and cabinets shall be assembled only by an approved traffic signal equipment supplier. The equipment shall be tested and approved in the equipment supplier's District One facility prior to field installation.

### **Electric Cable**

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

### **Mast Arm Assembly and Pole**

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

Traffic signal mast arms shall be one piece construction, unless otherwise approved by the Engineer. All poles shall be galvanized. If the Department approves painting, powder coating by the manufacturer will be required over the galvanization.

This work shall consist of furnishing and installing a galvanized steel or extruded aluminum shroud for protection of the mast arm pole base plate similar to the dimensions detailed in the "District One Standard Traffic Signal Design Details." The shroud shall be of sufficient strength to deter pedestrian and vehicular damage. The shroud shall allow air to circulate throughout the mast arm but not allow infestation of insects or other animals. The shroud shall be constructed, installed and designed not to be hazardous to probing fingers and feet. All mounting hardware shall be stainless steel. The shroud shall not be paid for separately but shall be included in the cost of the mast arm assembly and pole.



### **Traffic Signal Post**

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

All posts and bases shall be steel and hot dipped galvanized. If the Department approves painting, powder coating by the manufacturer will be required over the galvanization.

### **Signal Heads**

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

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

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

Signal heads shall be positioned according to the "District One Standard Traffic Signal Design Details."

### **Signal Head, Backplate**

Delete 1st sentence of Article 1078.03 of the Standard Specifications and add "All backplates shall be aluminum and louvered".

### **Inductive Loop Detector**

Add the following to Article 1079.01 of the Standard Specifications:

Contracts requiring new cabinets shall provide for card mounted detector amplifiers. Loop amplifiers shall provide LCD displays with loop frequency, inductance, and change of inductance readings.

### **Illuminated Sign, Light Emitting Diode**

Revise Sections 891 of the Standard Specifications to read:

Description

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

General

The light emitting diode (LED) blank out signs shall be manufactured by National Sign & Signal Company, or an approved equal and consist of a weatherproof housing and door, LEDs and transformers.

(a) Display.

1. The LED blank out sign shall provide the correct symbol and color for "NO LEFT TURN" OR "NO RIGHT TURN" indicated in accordance with the requirements of the "Manual on Uniform Traffic Control Devices". The message shall be formed by rows of LEDs.
2. The message shall be clearly legible. The message shall be highly visible, anywhere and under any lighting conditions, within a 15 degree cone centered about the optic axis.

The sign face shall be 24 inches (600 mm) by 24 inches (600 mm). The sign face shall be completely illegible when not illuminated. No symbol shall be seen under any ambient light condition when not illuminated.

3. All LEDs shall be T-1 3/4 (5mm) and have an expected lamplife of 100,000 hours. Operating wavelengths will be Red-626nm, Amber-590nm, and Bluish/Green-505nm. Transformers shall be rated for the line voltage with Class A insulation and weatherproofing. The sign shall be designed for operation over a range of temperatures from -35F to +165 F (-37C to +75C).
4. The LED module shall include the message plate, high intensity LEDs and LED drive electronics. Door panels shall be flat black and electrical connections shall be made via barrier-type terminal strip. All fasteners and hardware shall be corrosion resistant stainless steel.

(b) Housing

1. The housing shall be constructed of extruded aluminum. All corners and seams shall be heli-arc welded to provide a weatherproof seal around the entire case. Hinges shall be continuous full-length stainless steel. Signs shall have stainless steel hardware and provide tool free access to the interior of the sign. Doors shall be 0.125-inch thick extruded aluminum with a 3/16-inch x 1-inch neoprene gasket and sun hood. The sign face shall have a polycarbonate, matte clear, lexan face plate. Drainage shall be provided by four drain holes at the corners of the housing. The finish on the sign housing shall include two coats of exterior enamel applied after the surface is acid-etched and primed with zinc-chromate primer.
2. Mounting hardware shall be black polycarbonate or galvanized steel and similar to mounting Signal Head hardware and brackets specified herein.

Basis of Payment

This work shall be paid for at the unit price each for ILLUMINATED SIGN, L.E.D.

## **Grounding Existing Handhole Frame and Cover**

### **Description**

This work shall consist of all materials and labor required to bond the equipment grounding conductor to the existing handhole frame and handhole cover. All installations shall meet the requirements of the details in the "District One Standard Traffic Signal Design Details" and applicable portions of the Specifications.

The equipment grounding conductor shall be bonded to the handhole frame and to the handhole cover. Two (2) ½-inch diameter x 1 ¼-inch long hex-head stainless steel bolts, spaced 1.75-inches apart center-to-center shall be fully welded to the frame and to the cover to accommodate a heavy duty Listed grounding compression terminal (Burndy type YGHA or approved equal). The grounding compression terminal shall be secured to the bolts with stainless steel split-lock washers and nylon-insert locknuts.

Welding preparation for the stainless steel bolt hex-head to the frame and to the cover shall include thoroughly cleaning the contact and weldment area of all rust, dirt and contaminates. The Contractor shall assure a solid strong weld. The welds shall be smooth and thoroughly cleaned of flux and spatter. The grounding installation shall not affect the proper seating of the cover when closed.

The grounding cable shall be paid for separately.

### **Method of Measurement**

Units measured for payment will be counted on a per handhole basis, regardless of the type of handhole and its location.

### **Basis of Payment**

This work shall be paid for at the contract unit price each for GROUNDING EXISTING HANDHOLE FRAME AND COVER which shall be payment in full for grounding the handhole complete.

## **Unit Duct**

All installations of Unit Duct shall be included in the contract and not paid for separately. Polyethylene unit duct shall be used for detector loop raceways to the handholes. On temporary traffic signal installations with detector loops, polyethylene unit duct shall be used for detector loop raceways from the saw-cut to 10 feet (3m) up the wood pole, unless otherwise shown on the plans. Unit duct shall meet the requirements of NEC Article 343.

## **Uninterruptible Power Supply (Ups)**

### **Description**

This work shall consist of furnishing and installing an uninterruptible power supply (UPS).

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

The UPS shall include, but not be limited to the following: inverter/charger, power transfer relay, batteries, battery cabinet, a separate manually operated non-electronic bypass switch, and all necessary hardware and interconnect wiring according to the plans. The UPS shall provide reliable emergency power to the traffic signals in the event of a power failure or interruption. The transfer from utility power to battery power and visa versa shall not interfere with the normal operation of traffic controller, conflict monitor/malfunction management unit, or any other peripheral devices within the traffic controller assembly.

The UPS shall be designed for outdoor applications, and shall meet the environmental requirements of, "NEMA Standards Publication No. TS 2 – Traffic Controller Assemblies", except as modified herein.

#### Materials

The UPS shall be line interactive and provide voltage regulation and power conditioning when utilizing utility power. The UPS shall be sized appropriately for the intersection's normal traffic signal operating connected load, plus 20 percent (20%). The total connected traffic signal load shall not exceed the published ratings for the UPS. The UPS shall provide a minimum of six (6) hours of normal operation run-time for signalized intersections with LED type signal head optics at 77 °F (25 °C) (minimum 700 W/VA active output capacity, with 90 percent minimum inverter efficiency).

The maximum transfer time from loss of utility power to switchover to battery backed inverter power shall be 65 milliseconds.

The UPS shall have a minimum of three (3) sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) relay contact closures, available on a panel mounted terminal block or locking circular connectors, rated at a minimum 120 V/1 A, and labeled so as to identify each contact according to the plans. Contact closures shall be energized whenever the unit:

- Switches to battery power. Contact shall be labeled or marked "On Batt".
- Has been connected to battery power for two (2) hours. Contact shall be labeled or marked "Timer".
- Has an inverter/charger failure. Contact shall be labeled or marked "UPS Fail".

Operating temperature for the inverter/charger, power transfer relay, and manual bypass switch shall be -35 to 165 °F (-37 to +74 °C).

Both the power transfer relay and manual bypass switch shall be rated at 240 VAC/30 amps, minimum.

The UPS shall use a temperature-compensated battery charging system. The charging system shall compensate over a range of 1.4 – 2.2 mV/°F (2.5 - 4.0 mV/°C) per cell. The temperature sensor shall be external to the inverter/charger unit. The temperature sensor shall come with 6.5 ft (2 m) of wire.

Batteries shall not be recharged when battery temperature exceeds 122 °F ± 5 °F (50 °C ± 3 °C).

The UPS shall bypass the utility line power whenever the utility line voltage is outside of the following voltage range: 85 VAC to 135 VAC (± 2 VAC).

When utilizing battery power, the UPS output voltage shall be between 110 and 125 VAC, pure sine wave output, ≤ 3 percent THD, 60 Hz ± 3 Hz.

The UPS shall be compatible with the District's approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation.

When the utility line power has been restored at above  $90 \text{ VAC} \pm 2 \text{ VAC}$  for more than 30 seconds, the UPS shall dropout of battery backup mode and return to utility line mode.

When the utility line power has been restored at below  $130 \text{ VAC} \pm 2 \text{ VAC}$  for more than 30 seconds, the UPS shall dropout of battery backup mode and return to utility line mode.

The UPS shall be equipped to prevent a malfunction feedback to the cabinet or from feeding back to the utility service.

In the event of inverter/charger failure, the power transfer relay shall revert to the NC state, where utility line power is reconnected to the cabinet. In the event of an UPS fault condition, the UPS shall always revert back to utility line power.

Recharge time for the battery, from "protective low-cutoff" to 80 percent or more of full battery charge capacity, shall not exceed twenty hours.

The manual bypass switch shall be wired to provide power to the UPS when the switch is set to manual bypass.

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

As the battery reserve capacity reaches 50 percent, the intersection shall automatically be placed in all-red flash. The UPS shall allow the controller to automatically resume normal operation after the power has been restored. The UPS shall log an alarm in the controller for each time it is activated.

A blue LED indicator light shall be mounted on the front of the traffic signal cabinet or on the side of the UPS cabinet facing traffic and shall turn on to indicate when the cabinet power has been disrupted and the UPS is in operation. The light shall be a minimum 1 in. (25 mm) diameter, be viewable from the driving lanes, and able to be seen from 200 ft (60 m) away.

All 24 volt and 48 volt systems shall include an external or internal component that monitors battery charging to ensure that every battery in the string is fully charged. The device shall compensate for the effects of adding a new battery to an existing battery system by ensuring that the charge voltage is spread equally across all batteries.

#### Mounting/Configuration

The inverter/charger unit shall be rack or shelf-mounted.

All interconnect wiring provided between the power transfer relay, manual bypass switch, and cabinet terminal service block shall be at least 6.5 ft (2 m) of #10 AWG wire.

Relay contact wiring provided for each set of NO/NC relay contact closure terminals shall be 6.5 ft (2 m) of #18 AWG wire.

### Battery Cabinet

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

The door shall open to the entire cabinet, have a neoprene gasket, an Aluminum continuous piano hinge with stainless steel pin, and a three point locking system. The cabinet shall be provided with a main door lock which shall operate with a traffic industry conventional No. 2 key. Provisions for padlocking the door shall be provided.

The manually bypass switch shall be installed inside the traffic signal cabinet.

No more than three batteries shall be mounted on individual shelves for a cabinet housing six batteries and no more than four batteries per shelf for a cabinet housing eight batteries.

A minimum of three shelves shall be provided. Each shelf shall support a load of 132 lb (60 kg) minimum.

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

The battery cabinet shall be ventilated through the use of louvered vents, filters, and one thermostatically controlled fan. The cabinet fan shall not be energized when the traffic signals are on UPS power.

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

The UPS with battery cabinet shall come with all bolts, conduits and bushings, gaskets, shelves, and hardware needed for mounting. A warning sticker shall be placed on the outside of the cabinet indicating that there is an uninterruptible power supply inside the cabinet.

### Maintenance, Displays, Controls, and Diagnostics

The UPS shall include a display and/or meter to indicate current battery charge status and conditions.

The UPS shall have lightning surge protection compliant with IEEE/ANSI C.62.41.

The UPS shall be equipped with an integral system to prevent battery from destructive discharge and overcharge.

The UPS hardware and batteries shall be easily replaced without requiring any special tools or devices.

The UPS shall include a resettable front-panel event counter display to indicate the number of times the UPS was activated. The total number of hours the unit has operated on battery power shall be available from the controller unit or UPS unit.

The UPS shall be equipped with an RS-232 port.

The UPS shall include tip or kill switch installed in the battery cabinet, which shall completely disconnect power from the UPS when the switch is manually activated.

The UPS shall incorporate a flanged electric generator inlet for charging the batteries and operating the UPS. The generator connector shall be male type, twist-lock, rated as 15A, 125VAC with a NEMA L5-15P configuration and weatherproof lift cover plate (Hubbell model HBL4716C or approved equal). Access to the generator inlet shall be from a secured weatherproof lift cover plate or behind a locked battery cabinet police panel.

The manufacturer shall include two sets of equipment lists, operation and maintenance manuals, board-level schematic and wiring diagrams of the UPS, and battery data sheets. The manufacturer shall include any software needed to monitor, diagnose, and operate the UPS. The manufacturer shall include any required cables to connect the UPS to a laptop computer.

#### Battery System

Individual batteries shall be 12 V type, 65 amp-hour minimum capacity at 20 hours, and shall be easily replaced and commercially available off the shelf.

The UPS shall consist of an even number of batteries that are capable of maintaining normal operation of the signalized intersection for a minimum of six hours. Calculations shall be provided showing the number of batteries of the type supplied that are needed to satisfy this requirement. A minimum of four batteries shall be provided.

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

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

The batteries shall be provided with appropriate interconnect wiring and corrosion resistant mounting trays and/or brackets appropriate for the cabinet into which they will be installed.

Batteries shall indicate maximum recharge data and recharging cycles.

Battery interconnect wiring shall be via a modular harness. Batteries shall be shipped with positive and negative terminals pre-wired with red and black cabling that terminates into a typical power-pole style connector. The harness shall be equipped with mating power-pole style connectors for the batteries and a single, insulated plug-in style connection to the inverter/charger unit. The harness shall allow batteries to be quickly and easily connected in any order and shall be keyed and wired to ensure proper polarity and circuit configuration.

Battery terminals shall be covered and insulated so as to prevent accidental shorting.

Warranty

The warranty for an uninterruptible power supply (UPS) shall cover a minimum of two years from date the equipment is placed in operation; however, the batteries of the UPS shall be warranted for full replacement for a minimum of five years from the date the traffic signal and UPS are placed into service.

Installation

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

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

Basis of Payment

This work will be paid for at the contract unit price per each for UNINTERRUPTIBLE POWER SUPPLY.

**Signal Head, Light Emitting Diode**

Description

This work shall consist of furnishing and installing a traffic signal head or pedestrian signal head with light emitting diodes (LED) of the type specified in the plan or retrofitting an existing traffic signal head with a traffic signal module or pedestrian signal module with LEDs as specified in the plans.

General

LED signal heads (All Face and Section Quantities), (All Mounting Types) shall conform fully to the requirements of Sections 880 and 881 and Articles 1078.01 and 1078.02 of the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2007, and amended herein:

1. The LED signal modules shall be replaced or repaired if an LED signal module fails to function as intended due to workmanship or material defects within the first 60 months from the date of delivery. LED signal modules which exhibit luminous intensities less than the minimum values specified in Table 1 of the ITE Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Circular Signal Supplement (June 27, 2005) [VTSCH] or show signs of entrance of moisture or contaminants within the first 60 months of the date of delivery shall be replaced or repaired. The manufacturer's written warranty for the LED signal modules shall be dated, signed by an Officer of the company and included in the product submittal to the State.
2. Each module shall consist of an assembly that utilizes LEDs as the light source in lieu of an incandescent lamp for use in traffic signal sections.



(a) Physical and Mechanical Requirements

1. Modules can be manufactured under this specification for the following faces:
  - a. 12 inch (300 mm) circular, multi-section
  - b. 12 inch (300 mm) arrow, multi-section
  - c. 12 inch (300 mm) pedestrian, 2 sections
2. The maximum weight of a module shall be 4 lbs. (1.8 kg).
3. Each module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.
4. Material used for the lens and signal module construction shall conform to ASTM specifications for the materials.
5. The lens of the module shall be tinted with a wavelength-matched color to reduce sun phantom effect and enhance on/off contrast. The tinting shall be uniform across the lens face. Polymeric lens shall provide a surface coating or chemical surface treatment applied to provide abrasion resistance. The lens of the module shall be integral to the unit, convex with a smooth outer surface and made of plastic. The lens shall have a textured surface to reduce glare.
6. The use of tinting or other materials to enhance ON/OFF contrasts shall not affect chromaticity and shall be uniform across the face of the lens.
7. Each module shall have a symbol of the type of module (i.e. circle, arrow, etc.) in the color of the module. The symbol shall be 1 inch (25.4 mm) in diameter. Additionally, the color shall be written out in 1/2 inch (12.7mm) letters next to the symbol.

(b) Photometric Requirements

1. The minimum initial luminous intensity values for the modules shall conform to the values in Table 1 of the VTCSH (2005) for circular signal indications, and as stated in Table 3 of these specifications for arrow and pedestrian indications at 25°C.
2. The modules shall meet or exceed the illumination values stated in Article 1078.01(3)c of the "Standard Specifications for Road and Bridge Construction," Adopted January 1, 2007 for circular signal indications, and Table 3 of these specifications for arrow and pedestrian indications, throughout the useful life based on normal use in a traffic signal operation over the operating temperature range.
3. The measured chromaticity coordinates of the modules shall conform to the chromaticity requirements of Section 4.2 of the VTCSH (2005).
4. The LEDs utilized in the modules shall be AlInGaP technology for red, yellow, Portland orange (pedestrian) and white (pedestrian) indications, and GaN for green indications, and shall be the ultra bright type rated for 100,000 hours of continuous operation from -40°C to +74°C.

(c) Electrical

1. Maximum power consumption for LED modules is per Table 2.
2. LED modules will have EPA Energy Star compliance ratings, if applicable to that shape, size and color.
3. Operating voltage of the modules shall be 120 VAC. All parameters shall be measured at this voltage.
4. The modules shall be operationally compatible with currently used controller assemblies (solid state load switches, flashers, and conflict monitors).
5. When a current of 20 mA AC (or less) is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.
6. The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.
7. The individual LEDs shall be wired such that a catastrophic loss or the failure of one or more LED will not result in the loss of the entire module.

(d) Retrofit Traffic Signal Module

1. The following specification requirements apply to the Retrofit module only. All general specifications apply unless specifically superseded in this section.
2. Retrofit modules can be manufactured under this specification for the following faces:
  - a. 12 inch (300 mm) circular, multi-section
  - b. 12 inch (300 mm) arrow, multi-section
  - c. 12 inch (300 mm) pedestrian, 2 sections
3. Each Retrofit module shall be designed to be installed in the doorframe of a standard traffic signal housing. The Retrofit module shall be sealed in the doorframe with a one-piece EPDM (ethylene propylene rubber) gasket.
4. The maximum weight of a Retrofit module shall be 4 lbs. (1.8 kg).
5. Each Retrofit module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.
6. Electrical conductors for modules, including Retrofit modules, shall be 39.4 inches (1m) in length, with quick disconnect terminals attached.

7. The lens of the Retrofit module shall be integral to the unit, shall be convex with a smooth outer surface and made of plastic or of glass.
- (e) The following specification requirements apply to the 12 inch (300 mm) arrow module only. All general specifications apply unless specifically superseded in this section.
1. The arrow module shall meet specifications stated in Section 9.01 of the Equipment and Material Standards of the Institute of Transportation Engineers (November 1998) [ITE Standards], Chapter 2 (Vehicle Traffic Control Signal Heads) for arrow indications.
  2. The LEDs arrow indication shall be a solid display with a minimum of three (3) outlining rows of LEDs and at least one (1) fill row of LEDs.
- (f) The following specification requirement applies to the 12 inch (300 mm) programmed visibility (PV) module only. All general specifications apply unless specifically superseded in this section.
1. The LED module shall be a module designed and constructed to be installed in a programmed visibility (PV) signal housing without modification to the housing.
- (g) The following specification requirements apply to the 12 inch (300 mm) Pedestrian module only. All general specifications apply unless specifically superseded in this section.
1. Each pedestrian signal LED module shall provide the ability to actuate the solid upraised hand and the solid walking person on one 12 inch (300mm) section.
  2. Two (2) pedestrian sections shall be installed. The top section shall be wired to illuminate only the upraised hand and the bottom section shall be the walking man.
  3. "Egg Crate" type sun shields are not permitted. All figures must be a minimum of 9 inches (225mm) in height and easily identified from a distance of 120-feet (36.6m).

Basis of Payment

This item shall be paid for at the contract unit price each for SIGNAL HEAD, L.E.D., 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, L.E.D., 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, L.E.D., of the type specified, RETROFIT, which price shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of faces and the method of mounting.

**TABLES**

Table 2 Maximum Power Consumption (in Watts)

	Red		Yellow		Green	
	25°C	74°C	25°C	74°C	25°C	74°C
12 inch (300 mm) circular	11	17	22	25	15	15
12 inch (300 mm) arrow	9	12	10	12	11	11
	Hand-Portland Orange		Person-White			
Pedestrian Indication	6.2		6.3			

Table 3 Minimum Initial & Maintained Intensities for Arrow and Pedestrian Indications (in cd/m<sup>2</sup>)

	Red	Yellow	Green
Arrow Indication	5,500	11,000	11,000

**Pedestrian Countdown Signal Head, Light Emitting Diode**

**Description**

This work shall consist of furnishing and installing a pedestrian countdown signal head, with light emitting diodes (LED) of the type specified in the plan.

Pedestrian Countdown Signal Head, Light Emitting Diode, shall conform fully to the SIGNAL HEAD, LIGHT EMITTING DIODE specification, with the following modifications:

- (a) Application
  1. Pedestrian Countdown Signal Heads, shall not be used at signalized intersections where traffic signals and railroad warning devices are interconnected.
  2. All pedestrian signals at an intersection shall be the same type and have the same display. No mixing of countdown and other types of pedestrian traffic signals will be permitted.

(b) General

1. The module shall operate in one mode: Clearance Cycle Countdown Mode Only. The countdown module shall display actual controller programmed clearance cycle and shall start counting when the flashing clearance signal turns on and shall countdown to "0" and turn off when the steady Upraised Hand (symbolizing Don't Walk) signal turns on. Module shall not have user accessible switches or controls for modification of cycle.
2. At power on, the module shall enter a single automatic learning cycle. During the automatic learning cycle, the countdown display shall remain dark.
3. The module shall re-program itself if it detects any increase or decrease of Pedestrian Timing. The counting unit will go blank once a change is detected and then take one complete pedestrian cycle (with no counter during this cycle) to adjust its buffer timer.
4. The module shall allow for consecutive cycles without displaying the steady Upraised Hand.
5. The module shall recognize preemption events and temporarily modify the crossing cycle accordingly.
6. If the controller preempts during the Walking Person (symbolizing Walk), the countdown will follow the controller's directions and will adjust from Walking Person to flashing Upraised Hand. It will start to count down during the flashing Upraised Hand.
7. If the controller preempts during the flashing Upraised Hand, the countdown will continue to count down without interruption.
8. The next cycle, following the preemption event, shall use the correct, initially programmed values.
9. If the controller output displays Upraised Hand steady condition and the unit has not arrived to zero or if both the Upraised Hand and Walking Person are dark for some reason, the unit suspends any timing and the digits will go dark.
10. The digits will go dark for one pedestrian cycle after loss of power of more than 1.5 seconds.
11. The countdown numerals shall be two (2) "7 segment" digits forming the time display utilizing two rows of LEDs.
12. The LED module shall meet the requirements of the Institute of Transportation Engineers (ITE) LED purchase specification, "Pedestrian Traffic Control Signal Indications - Part 2: LED Pedestrian Traffic Signal Modules," or applicable successor ITE specifications, except as modified herein.
13. The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.
14. In the event of a power outage, light output from the LED modules shall cease instantaneously.

15. The LEDs utilized in the modules shall be AlInGaP technology for Portland Orange (Countdown Numerals and Upraised Hand) and GaN technology for Lunar White (Walking Person) indications.
16. The individual LEDs shall be wired such that a catastrophic loss or the failure of one or more LED will not result in the loss of the entire module.

(c) Pedestrian Countdown Signal Heads.

1. Pedestrian Countdown Signal Heads shall be 16 inch (406mm) x 18 inch (457mm), for single units with the housings glossy black polycarbonate. Connecting hardware and mounting brackets shall be polycarbonate (black). A corrosion resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on.
2. Each pedestrian signal LED module shall be fully MUTCD compliant and shall consist of double overlay message combining full LED symbols of an Upraised Hand and a Walking Person. "Egg Crate" type sun shields are not permitted. Numerals shall measure 9 inches (229mm) in height and easily identified from a distance of 120 feet (36.6m).

(d) Electrical.

1. Maximum power consumption for LED modules is 29 watts.
2. The measured chromaticity shall remain unchanged over the input line voltage range listed of 80 VAC to 135 VAC.

**Basis of Payment**

This item shall be paid for at the contract unit price each for PEDESTRIAN COUNTDOWN SIGNAL HEAD, L.E.D., of the type specified, which shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition. The type specified will indicate the number of faces and the method of mounting.

**Handhole to be Adjusted**

This work shall consist of adjusting an existing handhole up to proposed grade. The existing frame shall be left in place. 9" lone No. 4 rebars shall be drilled and grouted in place vertically at 9" centers on the top of the existing concrete walls of the handhole leaving 1-2" concrete cover above the top of the rebar. A minimum of 5" of additional concrete must be placed above the existing concrete walls. To meet this requirements portions of the existing concrete walls may need to be removed. The wall adjustment concrete shall be cast in place and a new frame and cover shall be placed. Care shall be taken to not damage existing wiring which is too remain operational at all times.

This work shall be constructed in accordance with applicable portions of Section 814 of the Standard specification and shall be paid for at the contract unit price each for HANDHOLE TO BE ADJUSTED.

**Full-Actuated Controller and Type IV Cabinet, Special**

This work shall consist of furnishing and installing a(n) "Eagle" brand traffic actuated solid state digital controller in the controller cabinet of the type specified, meeting the requirements of the current District One Traffic Signal Special Provisions. The controller cabinet shall be painted black.

Basis of Payment. This work will be paid for at the contract unit price each for FULL-ACTUATED CONTROLLER AND TYPE IV 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.

**Traffic Signal Post, 14 Foot, (Special)**

Add the following to Article 1077.01 of the Standard Specifications:

The Traffic Signal Post shall be fourteen (14) feet in height. The Traffic Signal Post and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 6214FP5 / BCC / BK with a black finish. See Traffic Signal Post exhibit A for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for TRAFFIC SIGNAL POST, 14 FOOT, (SPECIAL) which price shall be payment in full for furnishing and installing the signal post, including all necessary hardware.

**Traffic Signal Post, 15 Foot, (Special)**

Add the following to Article 1077.01 of the Standard Specifications:

The Traffic Signal Post shall be fifteen (15) feet in height. The Traffic Signal Post and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 6215FP5 / BCC / BK with a black finish. See Traffic Signal Post exhibit A for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for TRAFFIC SIGNAL POST, 15 FOOT, (SPECIAL) which price shall be payment in full for furnishing and installing the signal post, including all necessary hardware.

**Traffic Signal Post, 16 Foot, (Special)**

Add the following to Article 1077.01 of the Standard Specifications:

The Traffic Signal Post shall be sixteen (16) feet in height. The Traffic Signal Post and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 6216FP5 / BCC / BK with a black finish. See Traffic Signal Post exhibit A for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for TRAFFIC SIGNAL POST, 16 FOOT, (SPECIAL) which price shall be payment in full for furnishing and installing the signal post, including all necessary hardware.

**Traffic Signal Post, 18 Foot, (Special)**

Add the following to Article 1077.01 of the Standard Specifications:

The Traffic Signal Post shall be eighteen (18) feet in height. The Traffic Signal Post and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 6218FP5 / BCC / BK with a black finish. See Traffic Signal Post exhibit A for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for TRAFFIC SIGNAL POST, 18 FOOT, (SPECIAL) which price shall be payment in full for furnishing and installing the signal post, including all necessary hardware.

**Steel Mast Arm Assembly and Pole, 20 Ft, (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The traffic signal pole shall have a twenty (20) foot mast arm. The Steel Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9322STFP / 20MA / 4BCC / BK with a black finish. See Steel Mast Arm Assembly and Pole exhibit B for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for STEEL MAST ARM ASSEMBLY AND POLE, 20 FT, (SPECIAL) which price shall be payment in full for furnishing and installing the mast arm assembly and pole, including all necessary hardware.

**Steel Mast Arm Assembly and Pole, 22 Ft, (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The traffic signal pole shall have a twenty-two (22) foot mast arm. The Steel Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9322STFP / 22MA / 4BCC / BK with a black finish. See Steel Mast Arm Assembly and Pole exhibit B for additional details.



Basis of Payment. This work will be paid for at the contract unit price each for STEEL MAST ARM ASSEMBLY AND POLE, 22 FT, (SPECIAL) which price shall be payment in full for furnishing and installing the mast arm assembly and pole, including all necessary hardware.

**Steel Mast Arm Assembly and Pole, 26 Ft, (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The traffic signal pole shall have a twenty-six (26) foot mast arm. The Steel Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9322STFP / 26MA / 4BCC / BK with a black finish. See Steel Mast Arm Assembly and Pole exhibit B for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for STEEL MAST ARM ASSEMBLY AND POLE, 26 FT, (SPECIAL) which price shall be payment in full for furnishing and installing the mast arm assembly and pole, including all necessary hardware.

**Steel Mast Arm Assembly and Pole, 32 Ft, (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The traffic signal pole shall have a thirty-two (32) foot mast arm. The Steel Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9322STFP / 32MA / 4BCC / BK with a black finish. See Steel Mast Arm Assembly and Pole exhibit B for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for STEEL MAST ARM ASSEMBLY AND POLE, 32 FT, (SPECIAL) which price shall be payment in full for furnishing and installing the mast arm assembly and pole, including all necessary hardware.

**Steel Mast Arm Assembly and Pole, 34 Ft, (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The traffic signal pole shall have a thirty-four (34) foot mast arm. The Steel Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9322STFP / 34MA / 4BCC / BK with a black finish. See Steel Mast Arm Assembly and Pole exhibit B for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for STEEL MAST ARM ASSEMBLY AND POLE, 34 FT, (SPECIAL) which price shall be payment in full for furnishing and installing the mast arm assembly and pole, including all necessary hardware.

**Steel Mast Arm Assembly and Pole, 36 Ft, (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The traffic signal pole shall have a thirty-six (36) foot mast arm. The Steel Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9322STFP / 36MA / 4BCC / BK with a black finish. See Steel Mast Arm Assembly and Pole exhibit B for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for STEEL MAST ARM ASSEMBLY AND POLE, 36 FT, (SPECIAL) which price shall be payment in full for furnishing and installing the mast arm assembly and pole, including all necessary hardware.

**Steel Mast Arm Assembly and Pole, 38 Ft, (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The traffic signal pole shall have a thirty-eight (38) foot mast arm. The Steel Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9322STFP / 38MA / 4BCC / BK with a black finish. See Steel Mast Arm Assembly and Pole exhibit B for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for STEEL MAST ARM ASSEMBLY AND POLE, 38 FT, (SPECIAL) which price shall be payment in full for furnishing and installing the mast arm assembly and pole, including all necessary hardware.

**Steel Combination Mast Arm Assembly and Pole, 22 Ft, (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The traffic signal pole shall have a twenty-two (22) foot signal mast arm and a ten (10) foot luminaire mast arm. The mounting height for the luminaire shall be 35 feet. The Steel Combination Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9325SRTE-16SF / DA10 / SA22 / 4BCC / BK with a black finish.

Basis of Payment. This work will be paid for at the contract unit price each for STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 22 FT, (SPECIAL) which price shall be payment in full for furnishing and installing the mast arm assembly and pole, including all necessary hardware.

**Steel Combination Mast Arm Assembly and Pole, 24 Ft, (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The traffic signal pole shall have a twenty-six (26) foot signal mast arm and a ten (10) foot luminaire mast arm. The mounting height for the luminaire shall be 35 feet. The Steel Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9325SRTE-16SF / DA10 / SA24 / 4BCC / BK with a black finish.

Basis of Payment. This work will be paid for at the contract unit price each for STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 24 FT, (SPECIAL) which price shall be payment in full for furnishing and installing the mast arm assembly and pole, including all necessary hardware.

**Signal Head, L.E.D., 1-Face, 3-Section, Bracket Mounted**

**Signal Head, L.E.D., 1-Face, 3-Section, Mast-Arm Mounted**

**Signal Head, L.E.D., 1-Face, 4-Section, Bracket Mounted**

**Signal Head, L.E.D., 1-Face, 4-Section, Mast Arm Mounted**

**Signal Head, L.E.D., 1-Face, 5-Section, Bracket Mounted**

**Signal Head, L.E.D., 1-Face, 5-Section, Mast-Arm Mounted**

**Signal Head, L.E.D., 2-Face, 1-3 Section, 1-5 Section, Bracket Mounted**

**Signal Head, L.E.D., 2-Face, 1-4 Section, 1-5 Section, Bracket Mounted**

**Signal Head, L.E.D., 2-Face, 3-Section, Bracket Mounted**

This work shall consist of furnishing and installing L.E.D. signal heads meeting the requirements of the current District One Traffic Signal Special Provisions. The signal heads and related hardware shall be painted black. The cost of the painting shall be included in the cost of the signal head.

**Light Detector**

This work shall consist of furnishing and installing a light detector and confirmation beacon meeting the requirements of the current District One Traffic Signal Special Provisions. The light detector shall be 3M Opticom Brand 700 Series Detector for the Village of Wilmette. The light detector shall be Tomar Brand Detector for the City of Evanston.

**Light Detector Amplifier**

This work shall consist of furnishing and installing a light detector amplifier meeting the requirements of the current District One Traffic Signal Special Provisions. The Light Detector Amplifier shall be 3M Opticom Brand 700 Series Phase Selector for the Village of Wilmette. The light detector amplifier shall be Tomar Brand for the City of Evanston.

**Pedestrian Head, L.E.D., 1-Face, Bracket Mounted, With Countdown Timer**

**Pedestrian Head, L.E.D., 2-Face, Bracket Mounted, With Countdown Timer**

This work shall consist of furnishing and installing an L.E.D. pedestrian signal head meeting the requirements of the current District One Traffic Signal Special Provisions. The signal heads and related hardware shall be painted black. The cost of the painting shall be included in the cost of the signal head. Additional details for the pedestrian signal heads are as follows.

## Purchase Specification for LED Pedestrian Traffic Signal Modules with Countdown

### 1.0 PURPOSE

The purpose of this specification is to provide the minimum performance requirements for the LED "walking person" and "hand" icon pedestrian signal modules with countdown (hereafter called module or modules). This specification includes the following sizes (nominal overall message bearing surface): 406 x 457 mm (16 x 18 in) and 304 x 304 mm (12 x 12 in) (countdown only). This specification is not intended to impose restrictions upon specific designs and materials that conform to the purpose and the intent of this specification. This specification refers to definitions and practices described in "Pedestrian Traffic Control Signal Indications" published in the *Equipment and Materials Standards of the Institute of Transportation Engineers*, (referred to in this document as "PTCSI") and in the Manual on Uniform Traffic Control Devices (MUTCD). This purchasing specification applies to modules purchased after the effective date of these specifications.

### 2.0 PHYSICAL AND MECHANICAL REQUIREMENTS

#### 2.1 General

Modules designed as retrofit replacements for existing pedestrian signal indication lamps shall not require special tools for installation. Retrofit replacement modules shall fit into existing pedestrian signal housings built for the PTCSI sizes stated in Section 1 of the "walking person" and "hand" icon pedestrian signal indication Standard without modification to the housing. See PTCSI 4.2.1 for housing sizes.

Installation of a retrofit replacement module into an existing pedestrian signal housing shall only require the removal of the existing optical unit components, i.e., lens, lamp module, gaskets, and reflector; shall be weather tight and fit securely in the housing; and shall connect directly to existing electrical wiring.

#### 2.2 The Module under physical and mechanical requirements

##### 2.2.1

The retrofit module shall be capable of replacing the optical unit.

##### 2.2.2

The module lens may be a replaceable part without the need to replace the complete module.

##### 2.2.3

The walking person and hand icons (16"x18" size only) shall be full (not outlines), consisting of a minimum of 120 LEDs portland orange in the hand and 72 lunar white LEDs in the walking person to ensure uniformity. The countdown digits shall be made up of two rows of LEDs consisting of a minimum of 180 LEDs. The configurations of the walking person icon and hand icon are illustrated in Figure 1 and Figure 2 respectively.



Figure 1.

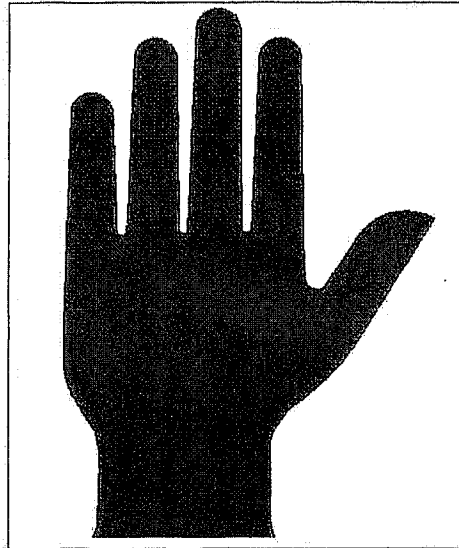


Figure 2.

**Dimensions for Figure 1 and Figure 2**

For each nominal message bearing surface (module) size, use the corresponding H (height) and W (width):

Bearing Surface	Module Size	Icon Height	Icon Width	Countdown Height	Countdown Width
A	406 x 457 mm (16 x 18 in)	297 mm or 11 in	178 mm or 7 in	229 mm or 9 in	165 mm or 6.5 in
B	304 x 304 mm (12 x 12 in)	229 mm or 9 in	134 mm or 5.25 in	229 mm or 9 in	229 mm or 9 in

Note: The units shall not have any external attachments or options that will allow the mode to be changed from counting the clearance cycle, to the full walk/don't walk cycle.

**2.3 Environmental Requirements**

**2.3.1.**

The module shall be rated for use in the ambient operating temperature range, measured at the exposed rear of the module, of -40 to +74°C (-40 to +165°F).

**2.3.2.**

The pedestrian module shall be designed to meet NEMA 250 Hose down Test. The test is to be conducted on a stand-alone unit. No protective housing shall be used.

**2.3.3.**

The module lens shall be UV stabilized.

**2.4 Construction**

**2.4.1.**

The module shall be a single, self-contained device, not requiring on-site assembly for installation into an existing traffic signal housing. The power supply shall be designed to fit and mount inside the pedestrian signal module.

**2.4.2.**

The assembly and manufacturing process for the module shall be designed to assure all internal LED and electronic components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

**2.5 Materials**

**2.5.1.**

Materials used for the lens and LED module construction shall conform to ASTM specifications where applicable.

**2.5.2.**

Enclosures containing the power supply and electronic components of the LED module shall be made of UL94VO flame retardant materials. The lens of the LED module is excluded from this requirement.

**2.6 Module Identification**

**2.6.1**

Each module shall be identified on the backside with the manufacturer's name, model numbers and serial number.

**2.6.2**

The following operating characteristics shall be identified: nominal voltage, power consumption, and Volt-Ampere.

**3.0 PHOTOMETRIC REQUIREMENTS**

**3.1 Luminance, Uniformity & Distribution**

**3.1.1**

For a minimum period of 60 months, the maintained minimum luminance values for the modules under the operating conditions defined in Sections 2.3.1 and 4.2.1, shall not be less than the values shown Reference 1 and Reference 2 for the walking person and hand icons respectively, when measured perpendicular to the surface of the module at nine (nine) separate points on the icon. These values may decrease up to 50% of these table values beyond 15° from the perpendicular in either to the left or right on a horizontal plane.

Reference 1. Maintained Minimum Luminance value for the Walking Person icon of the Module (candelas/meter square):

**5300 cd/m<sup>2</sup>**

Reference 2. Maintained Minimum Luminance value for the Hand icon of the Module (candelas/meter square):

**3750 cd/m<sup>2</sup>**

### **3.1.2**

The uniformity of the walking person and hand icons' illumination shall meet a ratio of not more than 1 to 5 between the minimum and maximum luminance measurements (in Cd/m<sup>2</sup>).

## **3.2 Chromaticity**

The standard colors for the LED Pedestrian Signal Module shall be White for the walking person and Portland Orange for the hand icon and countdown digits.

## **4.0 ELECTRICAL**

### **4.1 General**

All wiring and terminal blocks shall meet the requirements of Section 13.02 of the VTCSH Standard. Three secured, color coded, 914 mm (36 in) long 600 V, 16 AWG minimum, jacketed wires, conforming to the National Electrical Code, rated for service at +105°C, are to be provided for electrical connection.

### **4.2 Voltage Range**

#### **4.2.1**

LED modules shall operate from a 60 ± 3 Hertz ac line power over a voltage range from 80 to 135 VAC RMS. The current draw shall be sufficient to ensure compatibility and proper triggering and operation of load current switches and conflict monitors.

#### **4.2.2**

Nominal operating voltage for all measurements shall be 120 ± 3 Volts rms.

#### **4.2.3**

Fluctuations in line voltage over the range of 80Vac to 135Vac shall not affect luminous intensity by more than ± 10 %.

#### **4.2.4**

The LED circuitry shall prevent flickering at less than 100 Hz over the voltage range specified in Section 4.2.1.

#### **4.2.5**

Low Voltage Turn Off: There should be no illumination of the module when the applied voltage is less than 35 VAC RMS. To test for this condition the each icon must first be fully illuminated at the nominal operating voltage. The applied voltage shall then be reduced to the point where there is no illumination. This point must be greater than 35 VAC RMS.

#### **4.2.6**

Turn-On and Turn-Off Time: The each icon of the module shall reach 90% of their full illumination (turn-on) within 100 ms. of the application of the nominal operating voltage. The modules shall not be illuminated (turn-off) after 100 ms. of the removal of the nominal operating voltage.

For abnormal conditions when nominal voltage is applied to the unit across the two-phase wires (rather than being applied to the phase wire and the neutral wire) the pedestrian signal unit shall default to the hand symbol.

### **4.3 Transient Voltage Protection**

#### **4.3.1**

The module's on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients and low-repetition high-energy transients as stated in Section 2.1.6, NEMA Standard TS-2, 1998, or the latest version.

### **4.4 Electronic Noise**

The modules and associated on-board circuitry must meet Federal Communications Commission (FCC) Title 47, Sub Part B, Section 15 regulations concerning the emission of electronic noise.

### **4.5 Power Factor (PF) and AC Harmonics**

#### **4.5.1**

The modules shall provide a power factor of 0.90 or greater when operated at nominal operating voltage, and 25°C (77°F).

#### **4.5.2**

Total harmonic distortion induced into an AC power line by the module, operated at nominal operating voltage, at 25°C (77°F) shall not exceed 20%.



## 5.0 MODULE FUNCTIONS

### 5.1 Cycle

The module shall operate in one mode: **Clearance Cycle Countdown Mode Only.** The module will start counting when the flashing clearance signal turns on and will countdown to "0" and turn off when the steady "Don't Walk" signal turns on. **Module will not have user accessible switches or controls for modification of cycle.**

### 5.2 Learning Cycle

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

### 5.3 Cycle Modification

The unit re-programs itself if it detects any increase or decrease of Pedestrian Timing. The counting unit will go blank once a change is detected and then take one complete pedestrian cycle (with no counter during this cycle) to adjust its buffer timer.

### 5.4 Recycling

The module shall allow for consecutive cycles without displaying the steady Hand icon ("Don't Walk").

### 5.5 Preemption

The module shall recognize preemption events and temporarily modify the crossing cycle accordingly.

If the controller preempts during the walking man, the countdown will follow the controller's directions and will adjust from walking man to flashing hand. It will start to count down during the flashing hand.

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

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

### 5.6 "Don't Walk" Steady

If the controller output displays Don't Walk steady condition and the unit has not arrived to zero or if both the hand and man are dark for some reason, the unit suspends any timing and the digits will go dark.

### 5.7 Power Outage

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

## 6.0 QUALITY ASSURANCE

### 6.1 General

Unless otherwise specified all of the test will be conducted at an ambient temperature of 25°C and at the nominal operating voltage of 120 VAC RMS.

#### 6.1.1

The modules shall be manufactured in accordance with a vendor quality assurance (QA) program. The QA program shall include two types of

quality assurance: (1) design quality assurance and (2) production quality assurance.

#### **6.1.2**

QA process and test result documentation shall be kept on file for a minimum period of seven years.

### **6.2 Conformance**

The module designs not satisfying design qualification testing and the production quality assurance testing performance requirements shall not be labeled, advertised, or sold as conforming to this specification.

### **6.3 Design Qualification Assurance**

#### **6.3.1**

Design Qualification testing shall be performed on new module designs, and when a major design change has been implemented on an existing design.

Unless otherwise specified, all of the tests shall be conducted on the same set of randomly selected modules, hereafter called the sample set, at an ambient temperature of 25°C and at the nominal operating voltage of 120 VAC RMS.

#### **6.3.2**

Testing shall be performed once every 5 years or when the module design or LED technology has been changed. Test data shall be retained by the module manufacturers for a minimum period of 7 years and for a period of at least 5 years beyond the last date of manufacture of that model type.

### **6.4 Production Quality Assurance**

#### **6.4.1**

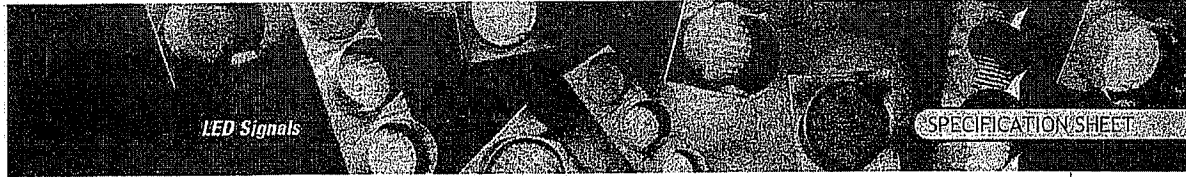
All new modules shall undergo Production Quality Assurance testing prior to shipment. Failure of any module to meet requirements of the QA tests shall be cause for rejection. QA test results shall be maintained for a period of 4 years.

#### **6.4.2**

The production quality assurance shall include statistically controlled routine tests to ensure minimum performance levels of modules built to meet this specification.

### **7.0 Warranty**

Manufacturers will provide the following warranty provisions. Replacement or repair of an LED signal module that fails to function as intended due to workmanship or material defects within the first 5 years (60 months) from the date of delivery.



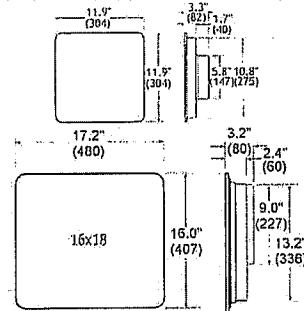
## LED COUNTDOWN PEDESTRIAN SIGNAL MODULES

### 1 Features & Benefits

- High efficiency & long life LED light source
- Failure of a single LED in the Hand and Person icons results in loss of light from only that LED
- Built-in redundancy in countdown module will ensure legibility of signal at the failure of an LED
- Automatically adjusts to the programmed intervals of the traffic controller
- Moisture and dust resistant
- Direct retrofit design
- Programmed software to recognize preemption and pedestrian recycling available in certain models

### 2 Mechanical Outline

Dimensions in inches. (mm) indicates metric equivalent



### 3 Design Qualification Testing

Test Type	Compliance
Chromaticity	ITE PTC SH-STD Part 2
Moisture Resistance	NEMA STD 250 Type 4 - 1991
Mechanical Vibration	MIL-STD-883 Method 2007
Electronic Noise	FCC Title 47 Sec 15 Sub. B <sup>1</sup>
Transient Voltage Protection	ITE PTC SH-STD Part 2
Controller Compatibility	NEMA TS-2-1992
Wiring	National Electric Code

<sup>1</sup>Class A

### 4 General Specifications

Parameter	Rating
Operating Temperature Range	-40 to +74° C (-40 to +165° F)
Operating Voltage Range	80 to 135 V (60Hz AC)
Power Factor (PF)	> 90 %
Total Harmonic Distortion (THD)	< 20 %
Voltage Turn-Off (VTO)	45 V
LED Color	Hand: Portland Orange Person: Lunar White Countdown: Portland Orange
Lens & Shell Material	UV Stabilized Polycarbonate

### 5 Product Characteristics

Model Number	Dimensions		Operating Mode	Symbol			AC Voltage	Nominal Power (W)			Figure
	Inches	mm		Cycle	Hand	Person		Countdown	Nominal	Hand	
PS7-CFF1-01A-18 <sup>2</sup>	16x18	407 X 450	Clearance	Full	Full	2 Rows / 9" high	120V - 60Hz	9	8	4	A
PS7-CFF1-01A-FL	16x18	407 X 450	Clearance	Full	Full	2 Rows / 7" high	120V - 60Hz	9	8	4	B
PS7-CFF1-01A	16x18	407 X 450	Clearance/Full	Full	Full	2 Rows / 7" high	120V - 60Hz	9	8	4	B
PS6-PFD2-01A-FL	12x12	300 X 300	Clearance	--	--	2 Rows / 7" high	120V - 60Hz	--	--	4	C
PS6-PFD2-01A	12x12	300 X 300	Clearance/Full	--	--	2 Rows / 7" high	120V - 60Hz	--	--	4	C
PS6-PFD2-01A-18 <sup>2</sup>	12x12	300 X 300	Clearance	--	--	2 Rows / 9" high	120V - 60Hz	--	--	4	D

<sup>2</sup> Full MUTCD Compliance

Figure A



Figure B



Figure C



Figure D



# 4 EVR 120

## Rec and Rnd

2 hole and  
4 hole mounting

### ADA Compliant Pedestrian Push Button

TS2 Compliant: 120 ms signal

#### Operating Description:

4 EVR is virtually vandal proof. The actuator is pressure sensitive and uses no screws or bolts, which can be bent or broken, in the functioning assembly. An LED and audible tone are momentarily activated with the pedestrian call, latching LED is available with the enlightened module. A minimum 120 ms signal is sent to the controller. 4 EVR cannot be stuck in a closed or constant call state.

#### Electrical Specifications:

Switch: Piezo Electric  
Operating Voltage: 12 – 24 v AC / DC  
Rated Life: > 100 X 10<sup>6</sup>

#### Mechanical Data:

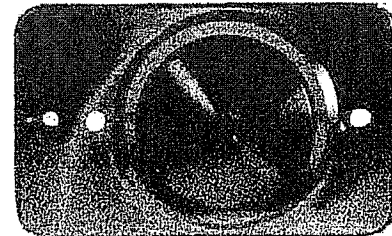
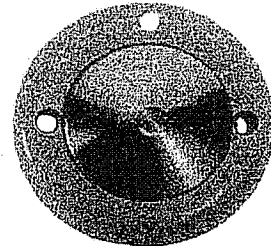
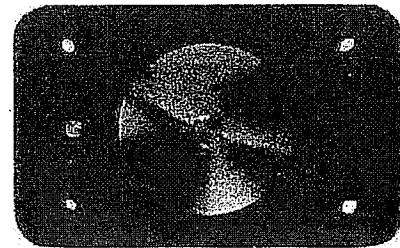
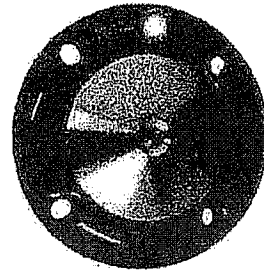
Minimum Activation Force: 1.5 N  
Degree of Protection – Sealed: 68 IP

#### Materials:

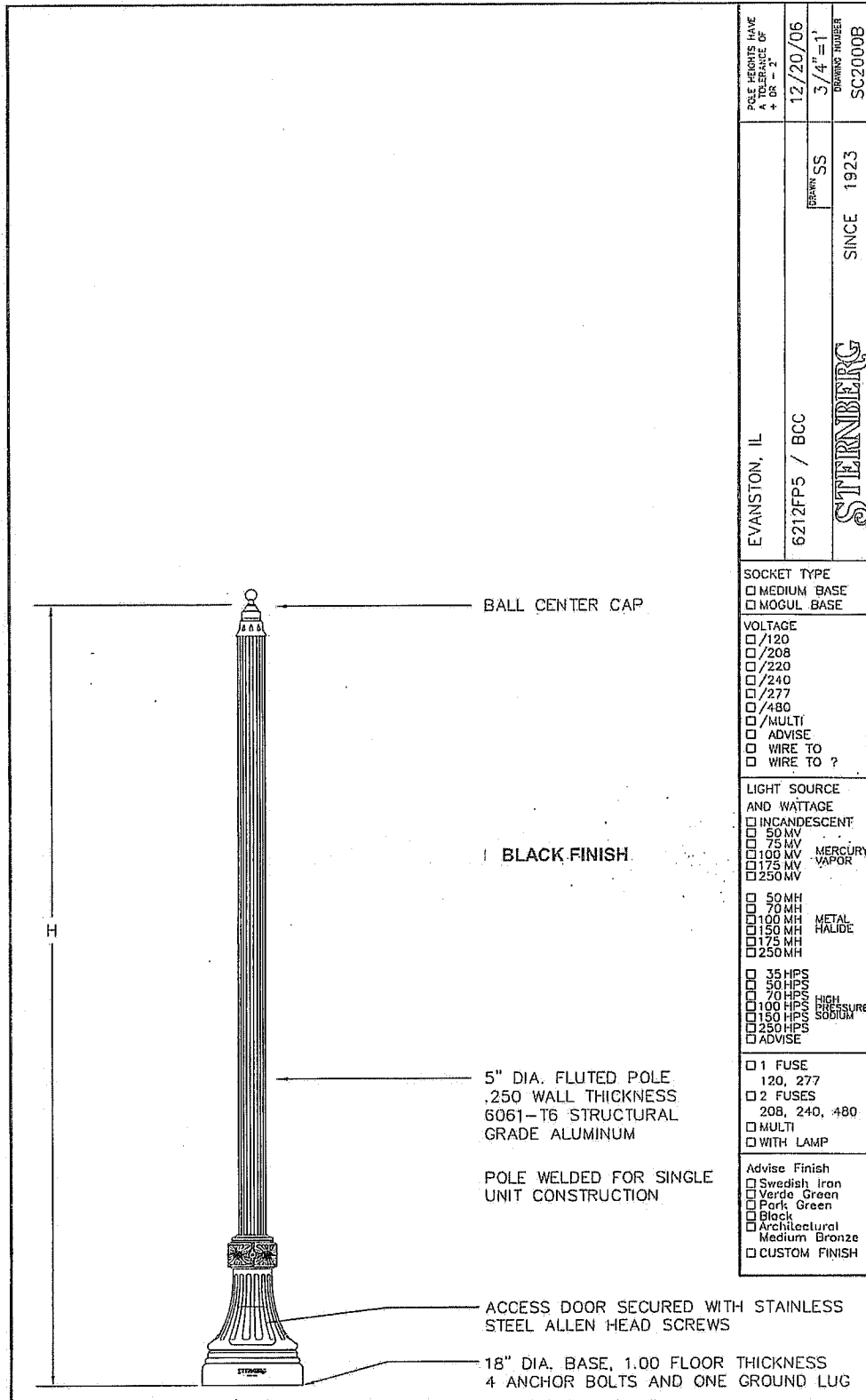
Bezel: Machined 6061 T6 AL Ingot  
Actuator: Machined SS  
Field Terminals and Mounting Hardware: SS  
Gasket: integral to design, solid neoprene

#### Mounting:

2 or 4 bolt pattern



FAU 3509 (Sheridan Road)  
 10<sup>th</sup> Street to Isabella Street  
 Section: 00-00173-00-FP  
 Village of Wilmette / City of Evanston  
 Cook County



EVANSTON, IL	POLE HEIGHTS HAVE A TOLERANCE OF + OR - 2	12/20/06	DRAWING NUMBER 3/4"=1'	SC2000B
	6212FP5 / BCC	SS		
SERNBERG		SINCE 1923		
		SOCKET TYPE <input type="checkbox"/> MEDIUM BASE <input type="checkbox"/> MOGUL BASE		
VOLTAGE <input type="checkbox"/> /120 <input type="checkbox"/> /208 <input type="checkbox"/> /220 <input type="checkbox"/> /240 <input type="checkbox"/> /277 <input type="checkbox"/> /480 <input type="checkbox"/> /MULTI <input type="checkbox"/> ADVISE <input type="checkbox"/> WIRE TO <input type="checkbox"/> WIRE TO ?				
LIGHT SOURCE AND WATTAGE <input type="checkbox"/> INCANDESCENT <input type="checkbox"/> 50 W <input type="checkbox"/> 75 W <input type="checkbox"/> 100 W <input type="checkbox"/> 175 W <input type="checkbox"/> 250 W <input type="checkbox"/> 50 MH <input type="checkbox"/> 70 MH <input type="checkbox"/> 100 MH <input type="checkbox"/> 150 MH <input type="checkbox"/> 175 MH <input type="checkbox"/> 250 MH <input type="checkbox"/> METAL HALIDE <input type="checkbox"/> 35 HPS <input type="checkbox"/> 50 HPS <input type="checkbox"/> 70 HPS <input type="checkbox"/> 100 HPS <input type="checkbox"/> 150 HPS <input type="checkbox"/> 250 HPS <input type="checkbox"/> HIGH PRESSURE SODIUM <input type="checkbox"/> ADVISE				
<input type="checkbox"/> 1 FUSE 120, 277 <input type="checkbox"/> 2 FUSES 208, 240, 480 <input type="checkbox"/> MULTI <input type="checkbox"/> WITH LAMP				
Advise Finish <input type="checkbox"/> Swedish Iron <input type="checkbox"/> Verde Green <input type="checkbox"/> Park Green <input type="checkbox"/> Black <input type="checkbox"/> Architectural <input type="checkbox"/> Medium Bronze <input type="checkbox"/> CUSTOM FINISH				

Exhibit A

FAU 3509 (Sheridan Road)  
 10<sup>th</sup> Street to Isabella Street  
 Section: 00-00173-00-FP  
 Village of Wilmette / City of Evanston  
 Cook County

	EVANSTON, IL 9300STFP / CA / 4BCC <b>STERNBERG</b>	12/20/06 1:24 DRAWING NUMBER SC2000A
	SOCKET TYPE <input type="checkbox"/> MEDIUM BASE <input type="checkbox"/> MOGUL BASE	VOLTAGE <input type="checkbox"/> /120 <input type="checkbox"/> /208 <input type="checkbox"/> /220 <input type="checkbox"/> /240 <input type="checkbox"/> /277 <input type="checkbox"/> /480 <input type="checkbox"/> /MULTI <input type="checkbox"/> ADVISE <input type="checkbox"/> WIRE TO <input type="checkbox"/> WIRE TO ?
Advise Finish <input type="checkbox"/> Swedish Iron <input type="checkbox"/> Verde Green <input type="checkbox"/> Park Green <input type="checkbox"/> Black <input type="checkbox"/> Architectural <input type="checkbox"/> Medium Bronze <input type="checkbox"/> CUSTOM FINISH		

Exhibit B

### **Roadway lighting**

The proposed roadway lighting improvements for this project include the following segments:

- 1) Removal and replacement of the existing lighting system along Sheridan from 10<sup>th</sup> Street to Chestnut Avenue. This work will include removal and disposal of the existing lighting units, installation of a new lighting units (ornamental aluminum pole, 10-foot davit mast arm, 35 mounting height, 250w medium cutoff type 3 luminaire), metal foundations, and unit duct, and all incidental and collateral work necessary to complete the improvement as shown in the plans and as described herein. Roadway lighting requirements for this segment shall comply with the following applicable latest electrical standards for IDOT-District 1, AASHTO, ANSI/IES RP-8 publication, NEC, and NESC.
- 2) Rehabilitation of the underground electrical system for the existing roadway lighting systems along Sheridan Road from Chestnut Avenue to Isabella Street in the Village of Wilmette and along Isabella Street from Sheridan Road to the western project limit. The work to be performed in this segment includes unit duct, splicing, relocation of existing lighting units, concrete foundations, and all incidental and collateral work necessary to complete the improvement as shown in the plans and as described herein. Roadway lighting requirements for this segment shall comply with the following applicable latest standards for IDOT-District I, AASHTO, ANSI/IES RP-8 publication, NEC, and NESC.

In addition, roadway lighting requirements for this project shall comply with the following applicable latest standards for Village of Wilmette and City of Evanston lighting standards, IDOT Standard Specifications for Road and Bridge Construction (latest edition), IDOT Supplemental and Recurring Special Provisions, and the Contract Special Provisions included herein.

### **General Electrical Requirements**

Effective: January 1, 2007

Add the following to Article 801 of the Standard Specifications:

“Maintenance transfer and Preconstruction Inspection:

General. Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall request a maintenance transfer and preconstruction site inspection, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance transfer and preconstruction inspection shall be made

no less than seven (7) calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

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

Establish the approximate location and operating condition of lighting and/or traffic control systems which may be affected by the work

Marking of Existing Cable Systems. The party responsible for maintenance of any existing lighting and/or traffic control systems at the project site will, at the Contractor's request, mark and/or stake, once per location, all underground cable routes owned or maintained by the State. A project may involve multiple "locations" where separated electrical systems are involved (i.e. different controllers). The markings shall be taken to have a horizontal tolerance of at least 304.8 mm (one (1) foot) to either side.. The request for the cable locations and marking shall be made at the same time the request for the maintenance transfer and preconstruction inspection is made. The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of his work, as specified elsewhere herein. Note that the contractor shall be entitled to only one request for location marking of existing systems and that multiple requests may only be honored at the contractor's expense. No locates will be made after maintenance is transferred, unless it is at the contractor's expense.

Condition of Existing Systems. The Contractor shall conduct an inventory of all existing electrical system equipment within the project limits, which may be affected by the work, making note of any parts which are found broken or missing, defective or malfunctioning. Megger and load readings shall be taken for all existing circuits which will remain in place or be modified. If a circuit is to be taken out in its entirety, then readings do not have to be taken. The inventory and test data shall be reviewed with and approved by the Engineer and a record of the inventory shall be submitted to the Engineer for the record. Without such a record, all systems transferred to the Contractor for maintenance during construction shall be returned at the end of construction in complete, fully operating condition."

Delete Articles 801.11 and 801.12 of the Standard Specifications.

Revise the 6<sup>th</sup> paragraph of Article 801.05(a) of the Standard Specifications to read:



“Resubmittals. All submitted items reviewed and marked ‘APPROVED AS NOTED’, or ‘DISAPPROVED’ are to be resubmitted in their entirety with a disposition of previous comments to verify contract compliance at no additional cost to the state unless otherwise indicated within the submittal comments.”

Revise Article 801.11(a) of the Standard Specifications to read:

“Lighting Operation and Maintenance Responsibility. The scope of work shall include the assumption of responsibility for the continuing operation and maintenance the of existing, proposed, temporary, sign and navigation lighting, or other lighting systems and all appurtenances affected by the work as specified elsewhere herein.”

Add the following to Section 801.11(a) of the Standard Specifications:

“Energy and Demand Charges. The payment of basic energy and demand charges by the electric utility for existing lighting which remains in service will continue as a responsibility of the Owner, unless otherwise indicated. Unless otherwise indicated or required by the Engineer duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously at the Owner's expense and lighting systems shall not be kept in operation during long daytime periods at the Owner's expense. Upon written authorization from the Engineer to place a proposed new lighting system in service, whether the system has passed final acceptance or not, (such as to allow temporary lighting to be removed), the Owner will accept responsibility for energy and demand charges for such lighting, effective the date of authorization. All other energy and demand payments to the utility shall be the responsibility of the Contractor until final acceptance.”

Add the following to Section 801 of the Standard Specifications:

“Lighting Cable Identification. Each wire installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.”

“Lighting Cable Fuse Installation. Standard fuse holders shall be used on non-frangible (non-breakaway) light pole installations and quick-disconnect fuse holders shall be used on frangible (breakaway) light pole installations. Wires shall be carefully stripped only as far as needed for connection to the device. Over-stripping shall be avoided. An oxide inhibiting lubricant shall be applied to the wire for minimum connection resistance before the terminals are crimped-on.

Crimping shall be performed in accordance with the fuse holder manufacturer's recommendations. The exposed metal connecting portion of the assembly shall be taped with two half-lapped wraps of electrical tape and then covered by the specified insulating boot. The fuse holder shall be installed such that the fuse side is connected to the pole wire (load side) and the receptacle side of the holder is connected to the line side.”

Revise the 2<sup>nd</sup> and 3<sup>rd</sup> sentences of the second paragraph of Article 801.02 of the Standard Specifications to read:

“Unless otherwise indicated, materials and equipment shall bear the UL label, or an approved equivalent, whenever such labeling is available for the type of material or equipment being furnished.”

**Ground Rod**

Effective: January 1, 2007

**Description.** This item shall consist of furnishing, installing and connecting ground rods for the grounding of service neutral conductors and for supplementing the equipment grounding system via connection at poles or other equipment throughout the system. All materials and work shall be in accordance with Article 250 of the NEC.

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

Item	Article/Section
(a) Grounding Electrodes.....	1087.01(b)
(b) Grounding Electrode Conductors.....	1087.01(a)
(c) Access Well.....	1087.01(c)

**CONSTRUCTION REQUIREMENTS**

**General.** All connections to ground rods, structural steel or fencing shall be made with exothermic welds. Where such connections are made to insulated conductors, the connection shall be wrapped with at least 4 layers of electrical tape extended 152.4 mm (six inches) onto the conductor insulation.

Ground rods shall be driven so that the tops of the rod are 609.6 mm (24 inches) below finished grade. Where indicated, ground wells shall be included to permit access to the rod connections.

Where indicated, ground rods shall be installed through concrete foundations.

Where ground conditions, such as rock, preclude the installation of the ground rod, the ground rod may be deleted with the approval of the Engineer.

Where a ground field of "made" electrodes is provided, such as at control cabinets, the exact locations of the rods shall be documented by dimensioned drawings as part of the Record Drawings.

Ground rod connection shall be made by exothermic welds. Ground wire for connection to foundation steel or as otherwise indicated shall be stranded uncoated bare copper in accordance the applicable requirements of ASTM Designation B-3 and ASTM Designation B-8 and shall be included in this item. Unless otherwise indicated, the wire shall not be less than No. 2 AWG.

Where connections are made to epoxy coated reinforcing steel, the epoxy coating shall be sufficiently removed to facilitate the exothermic weld.

**Method Of Measurement.** Ground rods shall be counted, each. Ground wires and connection of ground rods at poles shall be included in this pay item.

**Basis Of Payment.** This item shall be paid at the contract unit price each for **GROUND ROD**, of the diameter and length indicated which shall be payment in full for the material and work described herein.

### **Underground Raceways**

Effective: January 1, 2007

Revise Article 810.03 of the Standard Specifications to read:

“Installation. All underground conduit shall have a minimum depth of 30-inches (700 mm) below the finished grade.”

Add the following to Article 810.03 of the Standard Specifications:

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

Add the following to Article 810.03 of the Standard Specifications:

“All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 300 mm (12”) or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and

sealed with a cap designed for the conduit to be capped. The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap. The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 3 mm (0.125") thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring."

Add the following to Article 810.03(c) of the Standard Specifications:

"Coilable non-metallic conduit shall be machine straightened to remove the longitudinal curvature caused by coiling the conduit onto reels prior to installing in trench, encasing in concrete or embedding in structure. The straightening shall not deform the cross-section of the conduit such that any two measured outside diameters, each from any location and at any orientation around the longitudinal axis along the conduit differ by more than 6 mm (0.25")." The longitudinal axis of the straightened conduit shall not deviate by more than 20 mm per meter (0.25" per foot" from a straight line. The HDPE and straightening mechanism manufacturer operating temperatures shall be followed.

**Handhole, Composite Concrete, Special**

This work shall consist of furnishing and installing a composite concrete handhole in accordance with Section 814 of the Standard Specifications except as modified herein.

The composite concrete shall be manufactured by "Quazite" or approved equal. The handhole shall be and 11" x 18" PC Style (Stackable) Assembly as shown in the plan details.

All hardware for assembling the composite handhole shall be stainless steel.

The work will be paid for at the contract unit price each for HANDHOLE, COMPOSITE CONCRETE, SPECIAL.

**Wire and Cable**

Effective: January 1, 2007

Revise the second sentence of the first paragraph of Article 1066.02(a) to read:

“The cable shall be rated at a minimum of 90°C dry and 75°C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals.”

Revise the second paragraph of Article 1066.02(b) to read:

“Uncoated conductors shall be according to ASTM B3, ICEA S-95-658/NEMA WC70, and UL Standard 44. Coated conductors shall be according to ASTM B 33, ASTM B 8, ICEA S-95-658/NEMA WC70 and UL Standard 44.”

Revise the third paragraph of Article 1066.02(b) to read:

“All conductors shall be stranded. Stranding meeting ASTM B 8, ICEA S-95-658/NEMA WC70 and UL Standard 44. Uncoated conductors meeting ASTM B 3, ICEA S-95-658/NEMA WC70 and UL Standard 44.”

Revise the first sentence of Article 1066.03(a)(1) to read:

“General. Cable insulation designated as XLP shall incorporate cross-linked polyethylene (XLP) insulation as specified and shall meet or exceed the requirements of ICEA S-95-658, NEMA WC70, U.L. Standard 44.”

Add the following to Article 1066.03(a)(1) of the Standard Specifications:

“The cable shall be rated 600 volts and shall be UL Listed Type RHH/RHW/USE.”

Revise the Aerial Electric Cable Properties table of Article 1066.03(a)(3) to read:

Aerial Electric Cable Properties

Phase Conductor		Messenger wire			
Size AWG	Stranding	Average Insulation Thickness		Minimum Size AWG	Stranding
		mm	mils		
6	7	1.1	(45)	6	6/1
4	7	1.1	(45)	4	6/1
2	7	1.1	(45)	2	6/1
1/0	19	1.5	(60)	1/0	6/1

2/0	19	1.5	(60)	2/0	6/1
3/0	19	1.5	(60)	3/0	6/1
4/0	19	1.5	(60)	4/0	6/1

Revise the first paragraph of Article 1066.03(b) to read:

“EPR Insulation. Cable insulation shall incorporate ethylene propylene rubber (EPR) as specified and the insulation shall meet or exceed the requirements of ICEA S-95-658, NEMA Standard Publication No. WC70, and U.L. Standard 44, as applicable.”

Add the following to Article 1066.03(b) of the Standard Specifications:

“Cable sized No. 2 AWG and smaller shall be U.L. listed Type RHH/RHW and may be Type RHH/RHW/USE. Cable sized larger than No. 2 AWG shall be U.L. listed Type RHH/RHW/USE.”

Revise Article 1066.04 to read:

“Aerial Cable Assembly. The aerial cable shall be an assembly of insulated aluminum conductors according to Section 1066.02 and 1066.03. Unless otherwise indicated, the cable assembly shall be composed of three insulated conductors and a steel reinforced bare aluminum conductor (ACSR) to be used as the ground conductor. Unless otherwise indicated, the code word designation of this cable assembly is “Palomino”. The steel reinforced aluminum conductor shall conform to ASTM B-232. The cable shall be assembled according to ANSI/ICEA S-76-474.”

Revise the second paragraph of Article 1066.05 to read:

“The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing.”

Revise Article 1066.08 to read:

“Electrical Tape. Electrical tape shall be all weather vinyl plastic tape resistant to abrasion, puncture, flame, oil, acids, alkalis, and weathering, conforming to Federal Specification MIL-I-24391, ASTM D1000 and shall be listed under UL 510 Standard. Thickness shall not be less than 0.215 mm (8.5 mils) and width shall not be less than 20 mm (3/4-inch).”

**Trench and Backfill for Electrical Work**

Effective: January 1, 2007

Revise the first sentence of Article 819.03(a) of the Standard Specifications to read:

“Trench. Trenches shall have a minimum depth of 30 in. (760 mm) or as otherwise indicated on the plans, and shall not exceed 12 in. (300 mm) in width without prior approval of the Engineer.”

**Pole Foundation, Metal**

This work shall consist of furnishing and installing a metal light pole foundation in accordance with Section 836 of the Standard Specifications except as modified on the plan details.

The work will be paid for at the contract unit price each for POLE FOUNDATION, METAL.

**Maintenance of Existing Lighting System Complete**

Effective the date the contractor's activities (electrical or otherwise) at the job site begin, the contractor shall be responsible for the proper operation of all existing lighting systems which are part of, or which may be affected by the work until final acceptance or as otherwise determined by the Village of Wilmette and the City of Evanston.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the contractor shall initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact extent of the electrical equipment and systems to be maintained.

Existing lighting systems shall be defined as any lighting system or part of a lighting system in service, which has been installed under a previous contract. 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's responsibility shall include all applicable responsibilities of the Village of Wilmette and the City of Evanston. These responsibilities shall include the maintenance of lighting units, cable runs and lighting controls. In the case of a pole knockdown or sign light damage caused by normal vehicular traffic, the contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the engineer. Uncorrected deficiencies may be designated by the engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the contractor will be allowed to perform corrective action on specific lighting system equipment.

<b>INCIDENT OR PROBLEM</b>	<b>SERVICE RESPONSE TIME</b>	<b>SERVICE RESTORATION TIME</b>	<b>PERMANENT REPAIR TIME</b>
Control cabinet out	1 hour	4 hours	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	N/A
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	N/A
Outage of 75% of lights on one tower	1 hour	4 hours	N/A

**Service Response Time** -- amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.

**Service Restoration Time** – amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)



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**Permanent Repair Time** – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Village and the City reserves the right to assign any work not completed within this timeframe to the Electrical Contractor of their choice. All costs associated to repair this uncompleted work shall be the responsibility of the contractor. Failure to pay these costs to the Village and the City within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. Repeated failures and/or a gross failure of maintenance shall result in the Village's and/or City's Electrical Maintenance Contractor being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

Damage caused by the contractor's operations shall be repaired at no additional cost to the Contract and shall be included in this item and shall be repaired in accordance with all applicable sections of the latest addition of the Standard Specifications for Road and Bridge Construction.

The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods. The contractor shall demonstrate to the satisfaction of the engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

**Basis of Payment.** Maintenance of lighting systems shall be paid for at the contract lump sum price for the duration of the Contract for MAINTENANCE OF EXISTING LIGHTING SYSTEM COMPLETE, which shall include all work as described herein.

**Luminaire, Metal Halide, Horizontal Mount, 250 Watt**

Add the following to Section 1067 of the Standard Specifications:

The Luminaire shall be manufactured and/or supplied by General Electric Lighting Systems according to M-250A2 POWR/DOOR, Catalog Number: M2AC 25M3A1G MC3 with a black finish, or approved equal.

Add the following to first paragraph of Article 1067(c) of the Standard Specifications:

“The reflector shall not be altered by paint or other opaque coatings which would cover or coat the reflecting surface. Control of the light distribution by any method other than the reflecting material and the aforementioned clear protective coating that will alter the reflective properties of the reflecting surface is unacceptable”

Add the following to Article 1067(e)(1) of the Standard Specifications:

“The ballast shall be a pulse-start metal halide, constant wattage auto-regulator, (CWA) for operation on a nominal 240 volt system.”

The pulse-start metal halide, auto-regulator, (CWA) ballast shall be designed to ANSI Standards and shall be designed and rated for operation on a nominal 240 volt system. The ballast shall provide positive lamp ignition at the input voltage of 216 volts. It shall operate the lamp over a range of input voltages from 216 to 264 volts without damage to the ballast. It shall provide lamp operation within lamp specifications for rated lamp life at input design voltage range.

Add the following to Article 1067.02(a)(1) of the Standard Specifications:

“The beam of maximum candlepower for luminaires specified or shown to have a ‘medium’ distribution shall be at 70 degrees from the horizontal  $\pm$  2.5 degrees. Submittal information shall identify the angle.”

Add the following table(s) to Article 1067 of the Standard Specifications:

**IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE**

GIVEN CONDITIONS		
ROADWAY DATA	Pavement Width	39 (ft)
	Number of Lanes	3
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
LIGHT POLE DATA	Mounting Height	35 (ft)

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	Mast Arm Length	10 (ft)
	Pole Set-Back From Edge of Pavement	7.5 (ft)
LUMINAIRE DATA	Lamp Type	Metal Halide
	Lamp Lumens	20,500
	I.E.S. Vertical Distribution	Medium
	I.E.S. Control Of Distribution	Cutoff
	I.E.S. Lateral Distribution	Type III
	Total Light Loss Factor	0.7
LAYOUT DATA	Spacing	150 (ft)
	Configuration	Single Sided
	Luminaire Overhang over edge of pavement	2.5 (ft)

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

#### PERFORMANCE REQUIREMENTS

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

ILLUMINATION	Ave. Horizontal Illumination, $E_{AVE}$	9 Lux
	Uniformity Ratio, $E_{AVE}/E_{MIN}$	4 (Max)
LUMINANCE	Average Luminance, $L_{AVE}$	0.6 Cd/m <sup>2</sup>
	Uniformity Ratio, $L_{AVE}/L_{MIN}$	3.5 (Max)
	Uniformity Ratio, $L_{MAX}/L_{MIN}$	6 (Max)
	Veiling Luminance Ratio, $L_V/L_{AVE}$	0.4 (Max)

Basis of Payment. This work will be paid for at the contract unit price each for LUMINAIRE, METAL HALIDE, HORIZONTAL MOUNT, 250 WATT which price shall be payment in full for furnishing and installing the luminaire, including all necessary hardware.

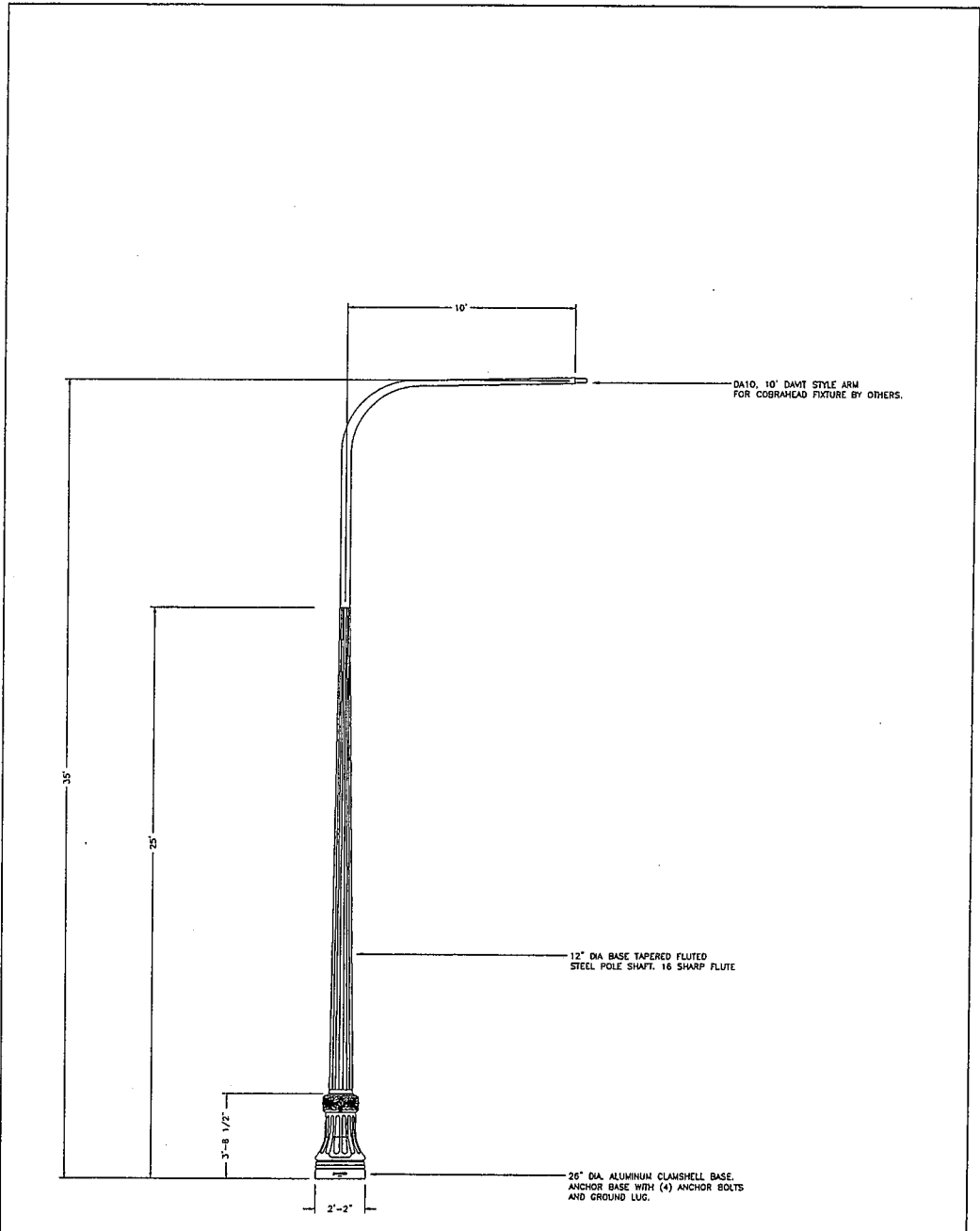
#### **Light Pole, Aluminum, 35 Ft. M.H., 10 Ft. Davit Arm (Special)**

Add the following to Article 1069.01 of the Standard Specifications:

The Light Pole with davit arm and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9325SRTF / 16SF / DA10 with a black finish. See Light Pole Exhibit A for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for LIGHT POLE, ALUMINUM, 35 FT. M.H. 10 FT. DAVIT ARM (SPECIAL) which price shall be payment in full for furnishing and installing the pole davit arm, including all necessary hardware.

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WILMETTE, IL		Scale	1:30	Drawn by	SS	DATE	3/15/07		REV #	DESCRIPTION	DATE	BY
9325SRTF-16SF / DA10		Checked by	SC3053	DATE								

EXHIBIT A - LIGHT POLE, ALUMINUM, 35 FT. M.H., 10 FT. DAVIT ARM (SPECIAL)

Ballast output over lamp life. Over the life of the lamp the ballast shall produce average output wattage of the nominal lamp rating as specified in the following table. Lamp wattage readings shall be taken at 5-volt increments throughout the ballast trapezoid. Reading shall begin at the lamp voltage (L<sub>v</sub>) specified in the table and continue at 5 volt increments until the right side of the trapezoid is reached. The lamp wattage values shall then be averaged and shall be within the specified value of the nominal ballast rating. Submittal documents shall include a tabulation of the lamp wattage vs. lamp voltage readings. Example: *For a 400w luminaire, the averaged lamp wattage reading shall not exceed the range of ±3% which is 388 to 412 watts*”

Nominal Ballast Wattage	LV Readings begin at	Maximum Wattage Variation
750	110v	± 3%
400	90v	± 3%
310	90v	± 3%
250	90v	± 4%
150	50v	± 4%
70	45v	± 5%

Add the following to Article 1067(f) of the Standard Specifications:

“Independent Testing. Independent testing of luminaires shall be required whenever the quantity of luminaires of a given wattage and distribution, as indicated on the plans, is 50 or more. For each luminaire type to be so tested, one luminaire plus one luminaire for each 50 luminaires shall be tested. Example: *A plan quantity of 75 luminaires would dictate that 2 to be tested; 135 luminaires would dictate that three be tested.*” If the luminaire performance table is missing from the contract documents, the luminaire(s) shall be tested and the test results shall be evaluated against the manufacturer’s published data. The test luminaire(s) results shall be equal to or better than the published data. If the test results indicated performance not meeting the published data, the test luminaire will be designated as failed and corrective action as described herein shall be performed.

The Contractor shall be responsible for all costs associated with the specified testing, including but not limited to shipping, travel and lodging costs as well as the costs of the tests themselves, all as part of the bid unit price for this item. Travel, lodging and other associated costs for travel by the Engineer shall be direct-billed to or shall be pre-paid by the Contractor, requiring no direct reimbursement to the Engineer or the independent witness, as applicable”

The Contractor shall select one of the following options for the required testing with the Engineer's approval:

- a. **Engineer Factory Selection for Independent Lab:** The Contractor may select this option if the luminaire manufacturing facility is within the state of Illinois. The Contractor shall propose an independent test laboratory for approval by the Engineer. The selected luminaires shall be marked by the Engineer and shipped to the independent laboratory for tests.
- b. **Engineer Witness of Independent Lab Test:** The Contractor may select this option if the independent testing laboratory is within the state of Illinois. The Engineer shall select, from the project luminaires at the manufacturer's facility or at the Contractor's storage facility, luminaires for testing by the independent laboratory.
- c. **Independent Witness of Manufacturer Testing:** The independent witness shall select from the project luminaires at the manufacturer's facility or at the Contractor's storage facility, the luminaires for testing. The Contractor shall propose a qualified independent agent, familiar with the luminaire requirements and test procedures, for approval by the Engineer, to witness the required tests as performed by the luminaire manufacturer.

The independent witness shall as a minimum meet the following requirements:

- ▶ Have been involved with roadway lighting design for at least 15 years.
- ▶ Not have been the employee of a luminaire or ballast manufacturer within the last 5 years.
- ▶ Not associated in any way (plan preparation, construction or supply) with the particular project being tested.
- ▶ Be a member of IESNA in good standing.
- ▶ Provide a list of professional references.

This list is not an all inclusive list and the Engineer will make the final determination as to the acceptability of the proposed independent witness.

- d. **Engineer Factory Selection and Witness of Manufacturer Testing:** The Contractor may select this option if the luminaire manufacturing facility is within the state of Illinois. At the Manufacturer's facility, the Engineer shall select the luminaires to be tested and shall be present during the testing process. The Contractor shall schedule travel by the Engineer to and from the Manufacturer's laboratory to witness the performance of the required tests."

Add the following to Article 1067.02(a)(1) of the Standard Specifications:

“The beam of maximum candlepower for luminaires specified or shown to have a ‘medium’ distribution shall be at 70 degrees from the horizontal  $\pm$  2.5 degrees. Submittal information shall identify the angle.”

Add the following table(s) to Article 1067 of the Standard Specifications:

**IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE**

GIVEN CONDITIONS		
<b>ROADWAY DATA</b>	Pavement Width	39 (ft)
	Number of Lanes	3
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
<b>LIGHT POLE DATA</b>	Mounting Height	35 (ft)
	Mast Arm Length	10 (ft)
	Pole Set-Back From Edge of Pavement	7.5 (ft)
<b>LUMINAIRE DATA</b>	Lamp Type	Metal Halide
	Lamp Lumens	20,500
	I.E.S. Vertical Distribution	Medium
	I.E.S. Control Of Distribution	Cutoff
	I.E.S. Lateral Distribution	Type III
	Total Light Loss Factor	0.7
<b>LAYOUT DATA</b>	Spacing	150 (ft)
	Configuration	Single Sided
	Luminaire Overhang over edge of pavement	2.5 (ft)

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

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

<b>ILLUMINATION</b>	Ave. Horizontal Illumination, $E_{AVE}$	9 Lux
	Uniformity Ratio, $E_{AVE}/E_{MIN}$	4 (Max)
<b>LUMINANCE</b>	Average Luminance, $L_{AVE}$	0.6 Cd/m <sup>2</sup>
	Uniformity Ratio, $L_{AVE}/L_{MIN}$	3.5 (Max)
	Uniformity Ratio, $L_{MAX}/L_{MIN}$	6 (Max)
	Veiling Luminance Ratio, $L_V/L_{AVE}$	0.4 (Max)

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Basis of Payment. This work will be paid for at the contract unit price each for LUMINAIRE, METAL HALIDE, HORIZONTAL MOUNT, 250 WATT which price shall be payment in full for furnishing and installing the luminaire, including all necessary hardware.

**Light Pole, Aluminum, 35 Ft. M.H., 10 Ft. Davit Arm (Special)**

Add the following to Article 1077.03 of the Standard Specifications:

The Light Pole with davit arm and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9325SRTF / 16SF / DA10 with a black finish. See Light Pole Exhibit A for additional details.

Basis of Payment. This work will be paid for at the contract unit price each for LIGHT POLE, ALUMINUM, 35 FT. M.H. 10 FT. DAVIT ARM (SPECIAL) which price shall be payment in full for furnishing and installing the pole davit arm, including all necessary hardware.



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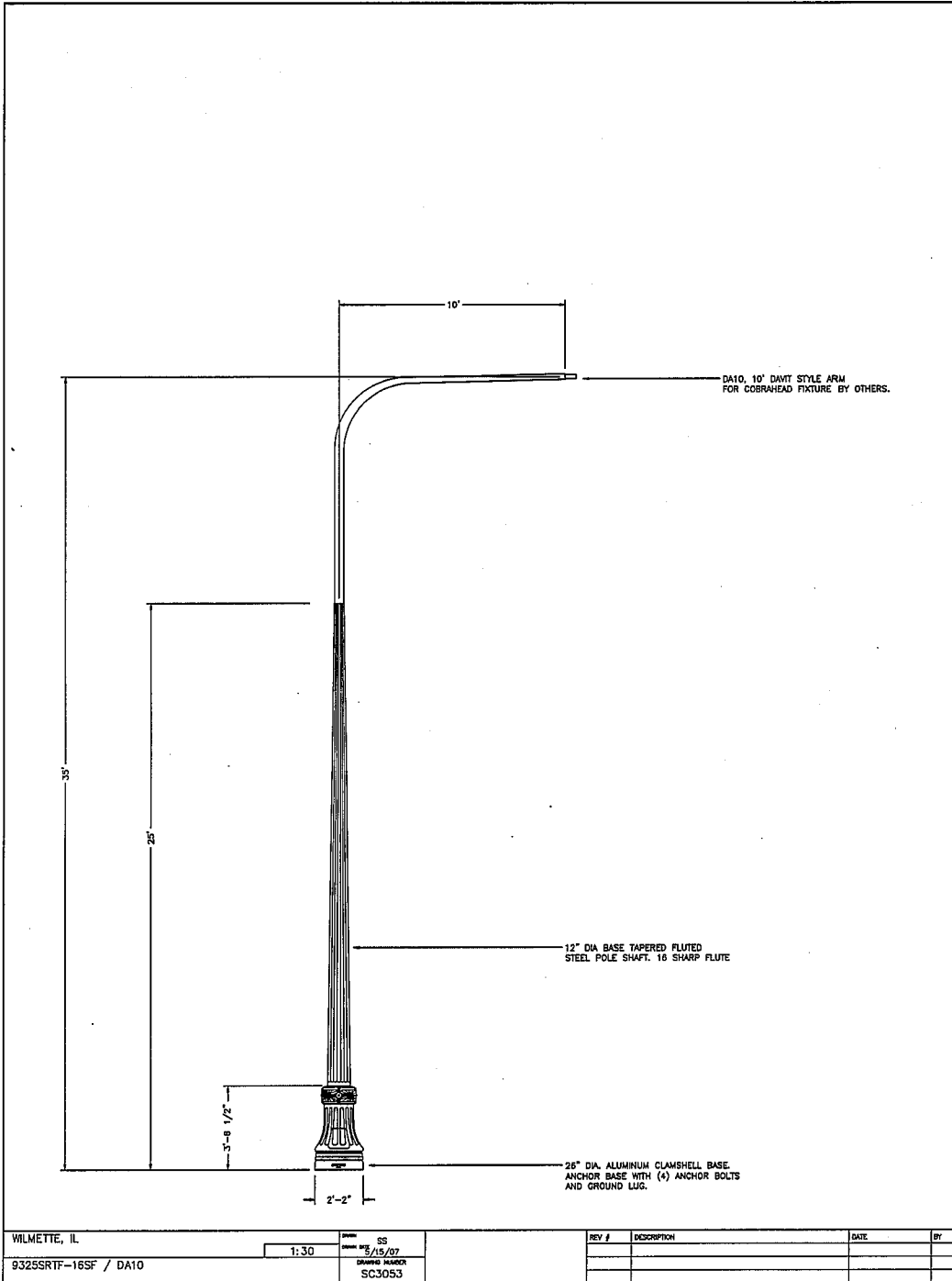


EXHIBIT A - LIGHT POLE, ALUMINUM, 35 FT. M.H., 10 FT. DAVIT ARM (SPECIAL)



**Business License Fees**

General business license fees are based on amount of square feet the business occupies. Specialty licenses may be required and are based on a single, uniform fee by type of service. Definitions for particular specialty licenses are included for reference. See fee schedule below for more information.

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**Total Due**

**Credit Card Information**

VISA     MasterCard    Account # \_\_\_\_\_    Expiration Date \_\_\_\_\_  
 Amount \_\_\_\_\_    Print Cardholder Name \_\_\_\_\_  
 Authorized Signature \_\_\_\_\_    ZIP Code \_\_\_\_\_

**You may use VISA, MasterCard or a check in payment of your license.**

**Updates/Corrections**

Use this area to indicate any changes needed to your license.

Total Gross Square Footage \_\_\_\_\_

New Business Services Offered \_\_\_\_\_  
(See Fee Schedule Below)

**Fee Schedule (Effective January 1, 2006)**

<b>General Business License</b>		<b>Specialty Licenses</b>	
Area of less than 3000 interior sq/ft	\$75.00	Food handler license, Category 1	\$245.00
Area of 3001 to 10000 interior sq/ft	\$150.00	Food handler license, Category 2	\$185.00
Area of over 10000 interior sq/ft	\$225.00	Food handler license, Category 3	\$125.00
School	No Fee	Food handler license, Category 4	\$50.00
Home Occupation	No Fee	24 Hour business license	\$50.00
Not-For-Profit	No Fee	Gasoline service station license	\$50.00
Care Facility - No Fee required for sq/ft	\$50.00	Tobacco vendor license	\$50.00
		Outdoor restaurant seating	
		On private property	\$25.00
		On public property	\$50.00

**SEWER REPLACEMENT  
NOTIFICATION AND REQUEST FOR INSPECTION**

THE METROPOLITAN WATER RECLAMATION DISTRICT  
OF GREATER CHICAGO  
111 EAST ERIE STREET, CHICAGO, ILLINOIS 60611  
312-751-3260

**1. PROJECT INFORMATION**

Name and description of project: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Location of project (street address or with respect to two major streets): \_\_\_\_\_

Municipality (Township, if unincorporated): \_\_\_\_\_

Related MWRD Sewer Permit Number, if known \_\_\_\_\_

**2. APPROXIMATE TIME SCHEDULE**

Start of Construction \_\_\_\_\_ ; Date of Completion \_\_\_\_\_

**3. PROJECT TYPE**

Commercial ; Industrial ; Residential ; Municipal ; Institutional ; Recreational ; Sewer Rehabilitation ; Unknown .

**4. SCOPE OF CONSTRUCTION**

Work consists of; Sewer main to be replaced ; Sewer service to be replaced ; Existing Manholes to be reconstructed . New: Manholes ; Greasetrap(s) ; Mud basin(s) ; Triple basin(s) .

Bedding: Type of bedding used for existing sewer, if any \_\_\_\_\_  
 (Bedding shall be used for the proposed work as required by MWRD specifications.)

Reason for replacement: Collapse ; Deterioration ; Suspected breaks  ; Excessive Infiltration/inflow  ; Building Alterations ; Other .

**5. MATERIAL AND JOINTS**

	Size	Estimated Length	Material and Specification	Joint and Specs	No. of M.H.'s
EXISTING					
PROPOSED					

<p><b>6. CO-PERMITTEE (OWNER/DEVELOPER)</b>                  We have read and thoroughly understand the conditions and requirements of this permit application.</p> <p>Address _____                  Signature: _____                  Name and Title (Print) _____                  Date _____ Phone _____</p>	<p><b>7. PERMITTEE (MUNICIPALITY)</b>                  I hereby certify that the project described herein will be constructed in accordance with all applicable requirements and necessary supervision will be provided.</p> <p>Municipality: _____                  Signature: _____                  Name and Title (Print) _____                  Date _____ Phone _____</p>
--	---

**FOR MWRD USE ONLY:**

APPROVAL \_\_\_\_\_

By \_\_\_\_\_ Date Issued \_\_\_\_\_

(Local Sewer System)

Fee Paid \$ \_\_\_\_\_

Atlas Sheet \_\_\_\_\_ Location: Horizontal (ft) \_\_\_\_\_ Vertical (ft) \_\_\_\_\_

Service Basin \_\_\_\_\_ Drainage Basin Code Number \_\_\_\_\_

1. APPLICABILITY: This form may be used in lieu of a regular sewer permit form only if the work consists of:

B. Reconstruction

Sewer reconstruction or replacement on public right of way or utility easement, including appurtenances, using the same alignment (same trench); or, the reconstruction of an existing sewer service, including the addition of an inspection manhole, with no change in alignment; and/or,

A. New Construction

The addition of a grease trap, triple basin, inspection manhole, or mud basin with less than 25 linear feet of new sewer service construction, in conjunction with an existing building alteration, and/or change in ownership or use. Plans are required for new construction.

This form shall not be used if the alignment is changed more than 5 feet horizontally, if new service areas are added, or if new connections require detention. For these cases, a standard permit is required. The sewer constructed shall be of the same diameter as that being replaced.

2. INSTRUCTIONS FOR FILING FORMS: Submit typed NRI forms in quadruplicate; complete all information or indicate non-applicability; do not leave any blank spaces; use "X" for checking applicable information. Submit four copies of location map and plans. Submit four copies of specifications, where applicable. Address all correspondence to Local Sewer Systems Section; for any inquiries or assistance, call (312) 751-3260.

Make written submittal sufficiently in advance. Give advance notice of two (2) working days before any work is started (telephone (708) 588-4055. For emergency repairs, give advance notice and obtain permission to start before any work is started, and proceed with written submittal. Failure to give advance notice and make written submittal as required constitutes a violation of the Sewer Permit Ordinance.

3. EXPIRATION: This NRI shall expire if construction has not started within one (1) year from the date of issue. Construction under an expired NRI is deemed construction without a permit. All construction under this NRI shall be completed within one (1) year after start of construction.

4. REVOCATION: In issuing this NRI, the MWRDGC has relied upon the statements and representations made by the Applicant or his agent. Any incorrect statements or representations shall be cause for revocation of this NRI, and all the rights of the Applicant hereunder shall immediately become null and void.

5. PERMIT FEES: The permit fee to be presented with the NRI application will be \$100.00 plus \$5.00 per linear foot of sewer. The Fee Payment Voucher form is to be completed and submitted as directed on that form. This NRI application will not be processed unless the fee, where applicable, is paid in full.

INSPECTION REPORT		(FOR MWRD USE ONLY)	
1.	TIME SCHEDULE: (a) Verbal telephone notice received: _____ (b) Work started: _____ Work completed: _____ (c) First inspection made: _____ (d) Total number of inspections made: _____		
2.	SUPERVISION: (a) Construction supervisor provided: Yes _____ No _____ If Yes, supervisor by Municipal employee: _____ by Consultant: _____ (b) Name of inspector: _____		
3.	MANHOLES: (a) With respect to the ground immediately adjacent, existing rms. are below _____ or above _____ immediate surroundings. (b) Existing/new manholes are located in a low area and are subject to entry or surface runoff: Yes _____ No _____ If Yes, watertight manhole covers are provided: Yes _____ No _____ (c) Condition of walls, bench, and frame of existing manholes: Subject to infiltration: _____ Satisfactory _____		
4.	MATERIALS: (a) Existing pipe: _____ Existing bedding: _____ Existing joint: _____ (b) New pipe: _____ New bedding: _____ New joint: _____		
5.	TESTING AND APPROVAL: (a) Visual inspection only _____ Other tests (specify): _____ (b) Test or inspection performed by: Municipal employee _____ Consultant _____ MWRD _____ (c) Names of persons performing or witnessing test or inspection: _____		
Comments: _____			
APPROVAL BY METROPOLITAN WATER RECLAMATION DISTRICT			
The project has been inspected and is hereby approved: (Test method: _____)			
This approval does not constitute a release from other obligations under the Sewer Permit Ordinance.			
Date: _____			
MWRD Area Inspector		MWRD Area Engineer/Field Supervisor	

RELEASE AND INDEMNITY

CONFINED SPACE ENTRY

KNOW ALL MEN BY THESE PRESENTS that \_\_\_\_\_

(Name)

("RELEASOR"), of \_\_\_\_\_,

(Address)

(City, State, Zip)

being of lawful age, in consideration of being permitted to enter sewers, structures, conduits, shafts, tunnels, chases, manholes, vaults and any other construction or facility owned or controlled by the METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO, ("DISTRICT"), and categorized by OSHA standards as ("PERMIT") ("NON-PERMIT") "CONFINED SPACE" for the purpose of

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

on or about \_\_\_\_\_, 20\_\_\_\_, does for RELEASOR AND RELEASOR'S heirs executors

(Month - Day)

administrators, personal representatives, successors, and assigns REMISE, RELEASE and FOREVER DISCHARGE the DISTRICT, its Commissioners, officers, agents and employees of and from any and all claims, causes of action, chases in action, losses, injuries, damages, or liabilities, which may have in anywise accrued in favor of RELEASOR and against the DISTRICT on account of RELEASOR'S presence on DISTRICT real estate and/or entry into, activity within or exit from any and all CONFINED SPACES owned or controlled by the DISTRICT.

RELEASOR acknowledges and understands that entry into such confined space may be dangerous and the environment within said CONFINED SPACE may be hazardous. RELEASOR acknowledges that the DISTRICT had disclosed all know facts regarding the conditions within said CONFINED SPACE and RELEASOR accepts the condition of said CONFINED SPACE, "AS-IS", AND "AS-FOUND" and "WITH ALL FAULTS".

RELEASOR further acknowledges that it has been advised of all regulations, rules, and conditions by which RELEASOR must abide in order to gain permitted access to said CONFINED SPACE and that it has fully completed and tendered to the DISTRICT the CONFINED SPACE ENTRY AUTHORIZATION FORM attached hereto.

RELEASOR acknowledges that all equipment used by RELEASOR during entry into, presence in and exit from CONFINED SPACE is owned or lawfully possessed by RELEASOR, that same is fully serviceable and in good working order, in full compliance with all applicable laws, orders, regulations, statutes, codes or any guidance of any governmental body having jurisdiction over the CONFINED SPACE RELEASOR the DISTRICT of RELEASOR'S activity therein. As further consideration for being granted access to the aforesaid CONFINED SPACE, RELEASOR acknowledges and agrees that RELEASOR will comply with all safety orders, or directions, written or verbal, given by DISTRICT personnel while RELEASOR is in and about the CONFINED SPACE, without question. Failure to comply with any such order or direction will result in RELEASOR'S expulsion from the CONFINED SPACE and all DISTRICT property.

In further consideration of the DISTRICT'S granting RELEASOR permission to enter upon its property, including, but not limited to, the aforesaid CONFINED SPACES, RELEASOR for RELEASOR AND RELEASOR'S heirs, executors, administrators, personal representatives, successors and assigns, agrees to defend, indemnify, keep and save harmless the DISTRICT, its Commissioners, officers, agents, and employees, against all injuries, deaths, losses, damages, claims, patent claims, liens, suits, liabilities, judgments, costs and expenses which may in anywise accrue, directly or indirectly, against the DISTRICT, its Commissioners, officers, agents or employees, in consequence of the granting of the aforesaid permission, or which may in anywise result therefrom or from any work done thereunder, whether or not shall be alleged or determined that the act was caused through negligence or omission of the RELEASOR or RELEASOR'S employees, or of any contractor or subcontractor, or their employees, if any, and the RELEASOR shall, at the RELEASOR'S sole expense appear, defend and pay all charges of attorneys and all costs and other expenses arising therefrom or incurred in connection therewith, and if any judgment shall be rendered against the DISTRICT, its Commissioners, officers, agents, or employees, in any such action the RELEASOR shall, at RELEASOR'S sole expense, satisfy and discharge the same.

In further consideration of DISTRICT granting RELEASOR access to the aforesaid CONFINED SPACE, RELEASOR agrees that, prior to entering upon said real estate or entering the CONFINED SPACE, it will procure, maintain and keep in force, at RELEASOR'S expense, public liability and property damage insurance in which the DISTRICT, its Commissioners, officers, agents and employees, are a named insured, and all-risk property insurance in which the DISTRICT is named loss payee from a company to be approved by the DISTRICT, each policy to have limits of not less than:

COMPREHENSIVE GENERAL LIABILITY  
Combined Single Limit Bodily Injury Liability  
Property Damage Liability  
In the amount of not less than \$ \_\_, 000,000.00  
Per Occurrence  
And  
ALL RISK PROPERTY INSURANCE  
In the amount of not less than \$ \_\_, 000,000.00  
Per Occurrence

Prior to entering upon said CONFINED SPACE, the RELEASOR shall furnish the DISTRICT certificates of such insurance or other suitable evidence that insurance coverage has been procured and is maintained in full force and effect. Upon DISTRICT'S written request, RELEASOR shall provide DISTRICT with copies of the actual insurance policies within ten (10) days of DISTRICT'S request for same. Such certificates and insurance policies shall clearly identify the affected real estate and CONFINED SPACE and shall provide that no change, modification in or cancellation of any insurance shall become effective until the expiration of thirty (30) days after written notice thereof shall have been given by the insurance carrier to the DISTRICT. The provisions of this paragraph shall in no way limit the liability of the RELEASOR to defend, indemnify and hold harmless the DISTRICT, as set forth above.

WITNESS my hand seal this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

(RELEASOR) \_\_\_\_\_  
(Corporation Name)

By: \_\_\_\_\_  
President

(RELEASOR) \_\_\_\_\_  
(Individual) (Title)

(RELEASOR) \_\_\_\_\_  
(Individual) (Title)

(RELEASOR) \_\_\_\_\_







Route FAU Route 3509  
Section 00-00173-00-FP  
County Cook

Marked Sheridan Road  
Project No. M-TE-00D1(781)

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.

7/10/2007

Signature

Date

Project Manager

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 improvement consists of roadway reconstruction, storm sewer and drainage structure adjustments and installation, sanitary sewer, water main, roadway lighting, traffic signal installation, landscaping, striping, and other minor items.

- 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):

Pre-Stage: watermain, retaining wall, and sewer outfalls. Stage 1A: Isabella Street to Lake Avenue, reconstruct east side. Stage 1B: Isabella Street to Lake Avenue, reconstruct west side. Stage 2A: Lake Avenue to 10<sup>th</sup> Street, reconstruct east side. Stage 2B: Lake Avenue to 10<sup>th</sup> Street, reconstruct west side. Stage 3A: Isabella Street and Lake Avenue intersections, south sides. Stage 3B: Isabella Street and Lake Avenue intersections, north sides. Stage 4: Sheridan Road, Isabella Street, and Lake Avenue punch list items.

- c. The total area of the construction site is estimated to be 17.4 acres.

The total area of the site that it is estimated will be disturbed by excavation, grading or other activities is 13.1 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, hydraulic report, or plan documents, hereby incorporated by reference, contain site map(s) indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of major soil disturbance, the location of major structural and nonstructural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands), and locations where storm water is discharged to a surface water.
- f. The names of receiving water(s) and areal extent of wetland acreage at the site are in the design/project report or plan documents which are incorporated by reference as a part of this plan.

## 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):

Stabilization practices include Permanent Sodding. A description of is provided below:

Sodding:

All areas disturbed by construction will be stabilized with permanent sodding immediately following the finished grading. All areas will receive 4 inches of topsoil. All sodding will be placed in accordance with the Landscaping Plans attached to this plan. Temporary erosion control seeding will be placed over any disturbed area which will not be permanently landscaped within 7 days.

- (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):

Structural practices include Inlet Filters, and Sediment Control, Silt Fence. A description is provided below.

**Inlet Filters:**

Inlet filters will be used at all inlets, catch basins or inlet pipes to catch silt and debris prior to getting into the sewer system.

**Sediment Control, Silt Fence:**

A silt fence will be placed adjacent to the areas of construction to intercept water borne silt and prevent it from leaving the site. Silt fences will be placed near the right-of-way and temporary easements. The project drains to a closed drainage system.

**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):

Sediment Control, Silt Fence will be placed at the ROW to prevent any runoff of sediment from on site.

**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:

All management practices, controls and other provisions provided in this plan and the Traffic Control and Erosion Control Plans are in accordance with IDOT Standard Specifications for Road and Bridge Construction and the Illinois Urban Manual.

MWRD Permit # pending

### 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):

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

Sediment Control, Drainage Structure Inlet Filter Cleaning will be used to clean the inlet filters used at all inlets, catch basins or inlet pipes that catch silt and debris prior to getting into the sewer system.

**Sediment Control, Silt Fence Maintenance:**

Sediment Control, Silt Fence Maintenance will be used to maintain the silt fence placed adjacent to the areas of construction that intercept water borne silt and prevent it from leaving the site. Silt fences will be placed near the right-of-way and temporary easements. The project drains to a closed drainage system

**Sodding:**

All areas disturbed by construction will be stabilized with permanent sodding immediately following the finished grading. All areas will receive 4 inches of topsoil. All sodding will be placed in accordance with the Landscaping Plans attached to this plan. Temporary erosion control seeding will be placed over any disturbed area which will not be permanently landscaped within 7 days.

### 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 pollution control measures).

No known non-storm discharges exist within the project limits.

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**Illinois Department  
of Transportation**

**Contractor Certification Statement**

This certification statement is a part of the Storm Water Pollution Prevention Plan for the project described below, in accordance with NPDES Permit No. ILR10, issued by the Illinois Environmental Protection Agency on May 14, 1998.

Project Information:

Route	<u>FAU Route 3509</u>	Marked	<u>Sheridan Road</u>
Section	<u>00-00173-00-FP</u>	Project No.	<u>M-TE-00D1(781)</u>
County	<u>Cook</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

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**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
NOTICE OF INTENT (NOI)  
GENERAL PERMIT TO DISCHARGE STORM WATER  
CONSTRUCTION SITE ACTIVITIES**

**OWNER INFORMATION**

NAME:	LAST Village of Wilmette	FIRST	MIDDLE	(OR COMPANY NAME)	OWNER TYPE:	City	
MAILING ADDRESS:	1200 Wilmette Avenue						
CITY:	Wilmette			STATE:	IL	ZIP:	60091
CONTACT PERSON:	Brigitte Mayerhofer			TELEPHONE NUMBER:	AREA CODE 847	NUMBER 853-7660	

**CONTRACTOR INFORMATION**

NAME:	LAST	FIRST	MIDDLE	(OR COMPANY NAME)	TELEPHONE NUMBER:	AREA CODE	NUMBER
MAILING ADDRESS:	CITY:			STATE:	ZIP:		

**CONSTRUCTION SITE INFORMATION**

SELECT ONE:	<input type="checkbox"/> New Site <input checked="" type="checkbox"/> CHANGE OF INFORMATION TO PERMIT NO. ILR _____ 400473 & 400335						
FACILITY NAME:	Sheridan Road			OTHER NPDES PERMIT NOS.:			
FACILITY LOCATION:	Isabella Street to 10th Street				TELEPHONE NUMBER:	AREA CODE	NUMBER
CITY:	Wilmette	ST:	IL	ZIP:	60091	LATITUDE:	42    4    34    LONGITUDE: 87    41    10
COUNTY:	Cook	SECTION:	27	TOWNSHIP:	T42N	RANGE:	13E
APPROX. CONST. START DATE:	11 / 05 / 07	APPROX. CONSTRUCTION END DATE:	7 / 03 / 09	TOTAL SIZE OF CONSTRUCTION SITE IN ACRES:	17.4		
STORM WATER POLLUTION PREVENTION PLAN COMPLETED <input type="checkbox"/> YES <input type="checkbox"/> NO (If no, separate notification required to Agency prior to construction.)							

**TYPE OF CONSTRUCTION**

TYPE BRIEF DESCRIPTION OF PROJECT:	Transportation	Roadway reconstruction, storm sewer, sanitary sewer, watermain, excavation, landscaping, and more.
------------------------------------	----------------	--

**HISTORIC PRESERVATION AND ENDANGERED SPECIES COMPLIANCE**

HAS THIS PROJECT SATISFIED APPLICABLE REQUIREMENTS FOR COMPLIANCE WITH ILLINOIS LAW ON:	HISTORIC PRESERVATION	<input type="checkbox"/> YES	<input type="checkbox"/> NO
	ENDANGERED SPECIES	<input type="checkbox"/> YES	<input type="checkbox"/> NO

**RECEIVING WATER INFORMATION**

DOES YOUR STORM WATER DISCHARGE DIRECTLY TO:	<input type="checkbox"/> WATERS OF THE STATE    OR <input type="checkbox"/> STORM SEWER	OWNER OF STORM SEWER SYSTEM:
NAME OF CLOSEST RECEIVING WATER:	North Shore Channel	

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this 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. In addition, I certify that the provisions of the permit, including the development and implementation of a storm water pollution prevention plan and a monitoring program plan, will be complied with.

OWNER SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**FOR OFFICE USE ONLY**

MAIL COMPLETED FORM TO:  (DO NOT SUBMIT ADDITIONAL DOCUMENTATION UNLESS REQUESTED)	ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF WATER POLLUTION CONTROL ATTN: PERMIT SECTION POST OFFICE BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 <a href="http://www.epa.state.il.us">www.epa.state.il.us</a>	LOG:
		PERMIT NO. ILR10
		DATE:

Information required by this form must be provided to comply with 415 ILCS 5/39 (1996). Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

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

SPECIAL PROVISION  
FOR  
COOPERATION WITH UTILITIES

Effective: January 1, 1999  
Revised: January 1, 2007

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

Replace Article 105.07 of the Standard Specifications with the following:

**"105.07 Cooperation with Utilities.** The adjustment of utilities consists of the relocation, removal, replacement, rearrangements, reconstruction, improvement, disconnection, connection, shifting, new installation or altering of an existing utility facility in any manner.

When the plans or special provisions include information pertaining to the location of underground utility facilities, such information represents only the opinion of the Department as to the location of such utilities and is only included for the convenience of the bidder. The Department assumes no responsibility in respect to the sufficiency or the accuracy of the information shown on the plans relative to the location of the underground utility facilities.

Utilities which are to be adjusted shall be adjusted by the utility owner or the owner's representative or by the Contractor as a contract item. Generally, arrangements for adjusting existing utilities will be made by the Department prior to project construction; however, utilities will not necessarily be adjusted in advance of project construction and, in some cases, utilities will not be removed from the proposed construction limits. When utility adjustments must be performed in conjunction with construction, the utility adjustment work will be shown on the plans and/or covered by Special Provisions.

When the Contractor discovers a utility has not been adjusted by the owner or the owner's representative as indicated in the contract documents, or the utility is not shown on the plans or described in the Special Provisions as to be adjusted in conjunction with construction, the Contractor shall not interfere with said utility, and shall take proper precautions to prevent damage or interruption of the utility and shall promptly notify the Engineer of the nature and location of said utility.

All necessary adjustments, as determined by the Engineer, of utilities not shown on the plans or not identified by markers, will be made at no cost to the Contractor except traffic structures, light poles, etc., that are normally located within the proposed construction limits as hereinafter defined will not be adjusted unless required by the proposed improvement.

(a) Limits of Proposed Construction for Utilities Paralleling the Roadway. For the purpose of this Article, limits of proposed construction for utilities extending in the same longitudinal direction as the roadway, shall be defined as follows:

- (1) The horizontal limits shall be a vertical plane, outside of, parallel to, and 600 mm (2 ft) distant at right angles from the plan or revised slope limits.

In cases where the limits of excavation for structures are not shown on the plans, the horizontal limits shall be a vertical plane 1.2 m (4 ft) outside the edges of structure footings or the structure where no footings are required.

- (2) The upper vertical limits shall be the regulations governing the roadbed clearance for the specific utility involved.
- (3) The lower vertical limits shall be the top of the utility at the depth below the proposed grade as prescribed by the governing agency or the limits of excavation, whichever is less.

(b) Limits of Proposed Construction for Utilities Crossing the Roadway. For the purpose of this Article, limits of proposed construction for utilities crossing the roadway in a generally transverse direction shall be defined as follows:

- (1) Utilities crossing excavations for structures that are normally made by trenching such as sewers, underdrains, etc. and all minor structures such as manholes, inlets, foundations for signs, foundations for traffic signals, etc., the limits shall be the space to be occupied by the proposed permanent construction unless otherwise required by the regulations governing the specific utility involved.
- (2) For utilities crossing the proposed site of major structures such as bridges, sign trusses, etc., the limits shall be as defined above for utilities extending in the same general direction as the roadway.

The Contractor may make arrangements for adjustment of utilities outside of the limits of proposed construction provided the Contractor furnishes the Department with a signed agreement with the utility owner covering the adjustments to be made. The cost of any adjustments made outside the limits of proposed construction shall be the responsibility of the Contractor unless otherwise provided.

The Contractor shall request all utility owners to field locate their facilities according to Article 107.31. The Engineer may make the request for location from the utility after receipt of notice from the Contractor. On request, the Engineer will make an inspection to verify that the utility company has field located its facilities, but will not assume responsibility for the accuracy of such work. The Contractor shall be responsible for maintaining the excavations or markers provided by the utility owners. This field location procedure may be waived if the utility owner has stated in writing to the Department it is satisfied the construction plans are sufficiently accurate. If the utility owner does not submit such statement to the Department, and they do not field locate their facilities in both horizontal and vertical alignment, the Engineer will authorize the Contractor in writing to proceed to locate the facilities in the most economical and reasonable manner, subject to the approval of the Engineer, and be paid according to Article 109.04.

The Contractor shall coordinate with any planned utility adjustment or new installation and the Contractor shall take all precautions to prevent disturbance or damage to utility facilities. Any failure on the part of the utility owner, or their representative, to proceed with any planned utility adjustment or new installation shall be reported promptly by the Contractor to the Engineer orally and in writing.

The Contractor shall take all necessary precautions for the protection of the utility facilities. The Contractor shall be responsible for any damage or destruction of utility facilities resulting from neglect, misconduct, or omission in the Contractor's manner or method of execution or nonexecution of the work, or caused by defective work or the use of unsatisfactory materials. Whenever any damage or destruction of a utility facility occurs as a result of work performed by the Contractor, the utility company will be immediately notified. The utility company will make arrangements to restore such facility to a condition equal to that existing before any such damage or destruction was done.

It is understood and agreed that the Contractor has considered in the bid all of the permanent and temporary utilities in their present and/or adjusted positions.

No additional compensation will be allowed for any delays, inconvenience, or damage sustained by the Contractor due to any interference from the said utility facilities or the operation of relocating the said utility facilities.

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

SPECIAL PROVISION  
FOR  
INSURANCE

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

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

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

Village of Willmette

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City of Evanston

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TranSystems

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

## **DRILLED SOLDIER PILE RETAINING WALL**

Effective: September 20, 2001

Revised: February 2, 2007

Description. This work shall consist of providing all labor, materials, and equipment necessary to fabricate and furnish the soldier piles, create and maintain the shaft excavations, set and brace the soldier piles into position and encase the soldier piles in concrete to the specified elevation. Also included in this work is the backfilling of the remainder of the shaft excavation with Controlled Low-Strength Material (CLSM), the furnishing and installation of the timber lagging, and the furnishing and installation of CLSM secant lagging. All work shall be according to the details shown on the plans and as directed by the Engineer.

The remainder of the retaining wall components as shown on the plans, such as concrete facing, shear studs, reinforcement bars, tie backs, hand rails, and various drainage items etc., are not included in this Special Provision but are paid for as specified elsewhere in this Contract.

Materials. The materials used for the soldier piles and lagging shall satisfy the following requirements:

- (a) The structural steel components for the soldier piles shall conform to the requirements of AASHTO M270, Grade 36 (M270M Grade 250), unless otherwise designated on the plans.
- (b) The soldier pile encasement concrete shall be Class DS according to Section 1020, except the mix design shall be as follows:
  - (1) When the plans specify that soil and ground water sulfate contaminates exceed 500 parts per million, a Type V cement shall be required. The cement shall be increased 60 lb./cu. yd. (35 kg/cu m) if the concrete is to be placed under water.
  - (2) If concrete is placed to displace drilling fluid or against temporary casing, the slump shall be  $8 \pm 1$  in. (200 mm  $\pm$  25 mm) at point of placement.
- (c) The Controlled Low-Strength Material (CLSM), used for backfilling shaft excavations above the soldier pile encasement concrete and for backfilling secant lagging excavations, to the existing ground surface, shall be according to Article 1019.
- (d) Temporary casing shall be produced by electric seam, butt, or spiral welding to produce a smooth wall surface, fabricated from steel satisfying ASTM A252 Grade 2. The minimum wall thickness shall be as required to resist the anticipated installation and dewatering stresses, as determined by the Contractor, but in no case less than 1/4 in. (6 mm).
- (e) Drilling slurry shall consist of a polymer or mineral base material. Mineral slurry shall have both a mineral grain size that will remain in suspension with sufficient viscosity and gel characteristics to transport excavated material to a suitable screening system. The percentage and specific gravity of the material used to make the suspension shall be



sufficient to maintain the stability of the excavation and to allow proper concrete placement. For polymer slurry, the calcium hardness of the mixing water shall not exceed 100 mg/L.

- (f) Timber Lagging. The minimum tabulated unit stress in bending ( $F_b$ ), used for the design of the timber lagging, shall be 1000 psi (6.9 MPa) unless otherwise specified on the plans. When treated timber lagging is specified on the plans, the method of treatment shall be according to Article 1007.12.

Equipment. The drilling equipment shall have adequate capacity, including power, torque and down thrust, to create a shaft excavation of the maximum diameter specified to a depth of 20 percent beyond the depths shown on the plans. Concrete equipment shall be according to Article 1020.03.

Construction Requirements. The shaft excavation for each soldier pile shall extend to the tip elevation indicated on the plans for soldier piles terminating in soil or to the required embedment in rock when rock is indicated on the contract plans. The Contractor shall satisfy the following requirements:

- (a) Drilling Methods. The soldier pile installation shall be according to 516.06(a),(b), or(c)

No shaft excavation shall be made adjacent to a soldier pile with encasement concrete that has a compressive strength less than 1500 psi (10.35 MPa), nor adjacent to secant lagging until the CLSM has reach sufficient strength to maintain it's position and shape unless otherwise approved by the Engineer. Materials removed or generated from the shaft excavations shall be disposed of by the Contractor according to Article 202.03. Excavation by blasting will not be permitted.

- (b) Drilling Slurry. During construction, the level of the slurry shall be maintained at a height sufficient to prevent caving of the hole. In the event of a sudden or significant loss of slurry to the hole, the construction of that shaft shall be stopped and the shaft excavation backfilled or supported by temporary casing until a method to stop slurry loss, or an alternate construction procedure, has been developed and approved by the Engineer.
- (c) Obstructions. Obstructions shall be defined as any object (such as but not limited to, boulders, logs, old foundations, etc.) that cannot be removed with normal earth drilling procedures, but requires special augers, tooling, core barrels or rock augers to remove the obstruction. When obstructions are encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to core, break up, push aside, or remove the obstruction. Lost tools or equipment in the excavation, as a result of the Contractor's operation, shall not be defined as obstructions and shall be removed at the Contractor's expense.
- (d) Top of Rock. The top of rock will be considered as the point where rock, defined as bedded deposits and conglomerate deposits exhibiting the physical characteristics and difficulty of rock removal as determined by the Engineer, is encountered which cannot be drilled with earth augers and/or underreaming tools configured to be effective in the soils indicated in

the contract documents, and requires the use of special rock augers, core barrels, air tools, blasting, or other methods of hand excavation.

- (e) Design Modifications. If the top of rock elevation encountered is below that estimated on the plans, such that the soldier pile length above rock is increased by more than 10 percent, the Engineer shall be contacted to determine if any soldier pile design changes are required. In addition, if the type of soil or rock encountered is not similar to that shown in the subsurface exploration data, the Engineer shall be contacted to determine if revisions are necessary.
- (f) Soldier Pile Fabrication and Placement. The soldier pile is defined as the structural steel section(s) shown on the plans as well as any connecting plates used to join multiple sections. Cleaning and painting of all steel components, when specified, shall be as shown on the plans and accomplished according to the special provision for "Cleaning and Painting New Metal Structures". This work will not be paid for separately, but shall be considered included in the cost of Furnishing Soldier Piles of the type specified.

The soldier pile shall be shop fabricated such that no field welding is required. The Contractor shall attach suitable bracing or support to maintain the position of the soldier pile within the shaft excavation such that the final location will satisfy the Construction Tolerances portion of this Special Provision. The bracing or supports shall remain in place until the concrete for encasement has reached a minimum compressive strength of 1500 psi (10.35 MPa).

When embedment in rock is indicated on the plans, modification to the length of a soldier pile may be required to satisfy the required embedment. The modification shall be made to the top of the soldier pile unless otherwise approved by the Engineer. When the top of rock encountered is above the estimated elevation indicated on the plans, the soldier piles shall be cut to the required length. If the top of rock encountered is below that estimated on the plans, the Contractor shall either furnish longer soldier piles or splice on additional length of soldier pile per Article 512.05(a) to satisfy the required embedment in rock. In order to avoid delays, the Contractor may have additional soldier pile sections fabricated as necessary to make the required adjustments. Additional soldier pile quantities, above those shown on the plans, shall not be furnished without prior written approval by the Engineer.

- (g) Concrete Placement. Concrete work shall be performed according to Article 516.12 and as specified herein.

The soldier pile encasement concrete pour shall be made in a continuous manner from the bottom of the shaft excavation to the elevation indicated on the plans. Concrete shall be placed as soon as possible after the excavation is completed and the soldier pile is secured in the proper position. Uneven levels of concrete placed in front, behind, and on the sides of the soldier pile shall be minimized to avoid soldier pile movement, and to ensure complete encasement.

Following the soldier pile encasement concrete pour, the remaining portion of the shaft excavation shall be backfilled with CLSM according to Section 593. CLSM Secant lagging placement shall be placed as soon as practical after the shaft excavation is cleared.

- (h) Construction Tolerances. The soldier piles shall be drilled and located within the excavation to satisfy the following tolerances:
- (1) The center of the soldier pile shall be within 1 1/2 in. (38 mm) of plan station and 1/2 in. (13 mm) offset at the top of the shaft.
  - (2) The out of vertical plumbness of the soldier pile shall not exceed 0.83 percent.
  - (3) The top of the soldier pile shall be within  $\pm 1$  in. ( $\pm 25$  mm) of the plan elevation.
- (i) Timber Lagging. Timber lagging, when required by the plans, installed below the original ground surface, shall be placed from the top down as the excavation proceeds. Lagging shown above grade shall be installed and backfilled against prior to installing any permanent facing to minimize post construction deflections. Over-excavation required to place the timber lagging behind the flanges of the soldier piles shall be the minimum necessary to install the lagging. Any voids produced behind the lagging shall be filled with porous granular embankment at the Contractors expense. When the plans require the Contractor to design the timber lagging, the design shall be based on established practices published in FHWA or AASHTO documents considering lateral earth pressure, construction loading, traffic surcharges and the lagging span length(s). The nominal thickness of the lagging selected shall not be less than 3 in. (75 mm) and shall satisfy the minimum tabulated unit stress in bending (Fb) stated elsewhere in this Special Provision. The Contractor shall be responsible for the successful performance of the lagging system until the concrete facing is installed. When the nominal timber lagging thickness(s) and allowable stress are specified on the plans, the timber shall be rough cut or surfaced and in accordance with Article 1007.03.
- (j) Structure Excavation. When structure excavation is necessary to place a concrete facing, it shall be made and paid for according to Section 502 except that the horizontal limits for structure excavation shall be from the face of the soldier pile to a vertical plane 2 ft. (600 mm) from the finished face of the wall. The depth shall be from the top of the original ground surface to the bottom of the concrete facing. The additional excavation necessary to place the lagging whether through soil or CLSM shall be included in this work.
- (k) Geocomposite Wall Drain. When required by the plans, the geocomposite wall drain shall be installed and paid for according to Section 591 except that, in the case where a concrete facing is specified on the plans, the wall drain shall be installed on the concrete facing side of the timber lagging with the pervious (fabric) side of the drain installed to face the timber. When a concrete facing is not specified on the plans, the pervious (fabric) side of the drain shall be installed to face the soil. In this case, the drain shall be installed in stages as the timber lagging is installed. The wall drain shall be placed in sections and spliced, or kept on a continuous roll, so that as each timber is placed, the drain can be properly located as the excavation proceeds.

Method of Measurement. The furnishing of soldier piles will be measured for payment in feet (meters) along the centerline of the soldier pile for each of the types specified. The length shall

be determined as the difference between the plan top of soldier pile and the final as built shaft excavation bottom.

The drilling and setting of soldier piles in soil and rock, will be measured for payment and the volumes computed in cubic feet (cubic meters) for the shaft excavation required to set the soldier piles according to the plans and specifications, and accepted by the Engineer. These volumes shall be the theoretical volumes computed using the diameter(s) of the shaft(s) shown in the plans and the depth of the excavation in soil and/or rock as appropriate. The depth in soil will be defined as the difference in elevation between the ground surface at the time of concrete placement and the bottom of the shaft excavation or the top of rock (when present), whichever is encountered first. The depth in rock will be defined as the difference in elevation between the measured top of rock and the bottom of the shaft excavation.

Drilling and placing CLSM secant lagging shall be measured for payment in cubic feet (cubic meters) of the shaft excavation required to install the secant lagging as shown in the plans. This volume shall be the theoretical volume computed using the diameter(s) shown on the plans and the difference in elevation between the as built shaft excavation bottom and the ground surface at the time of the CLSM placement.

Timber lagging shall be measured for payment in square feet (square meters) of timber lagging installed to the limits as shown on the plans. The quantity shall be calculated using the minimum lagging length required on the plans multiplied by the as installed height of timbers, for each bay of timber lagging spanning between the soldier piles.

Basis of Payment. The furnishing of soldier piles will be paid for at the contract unit price per foot (meter) for FURNISHING SOLDIER PILES, of the type specified, for the total number of feet (meters) furnished to the job site. The cost of any field splices required due to changes in top of rock elevation shall be paid for according to Article 109.04.

The drilling and setting of soldier piles will be paid for at the contract unit price per cubic foot (cubic meter) for DRILLING AND SETTING SOLDIER PILES (IN SOIL) and DRILLING AND SETTING SOLDIER PILES (IN ROCK). The required shaft excavation, soldier pile encasement concrete and any CLSM backfill required around each soldier pile will not be paid for separately but shall be included in this item.

The timber lagging will be paid for at the contract unit price per square foot (square meter) for UNTREATED TIMBER LAGGING, or TREATED TIMBER LAGGING as detailed on the plans.

The secant lagging will be paid for at the contract unit price per cubic foot (cubic meter) for SECANT LAGGING. The required shaft excavation and CLSM backfill required to fill that excavation shall be included in this item.

Obstruction mitigation shall be paid for according to Article 109.04.

No additional compensation, other than noted above, will be allowed for removing and disposing of excavated materials, for furnishing and placing concrete, CLSM, bracing, lining, temporary

casings placed and removed or left in place, or for any excavation made or concrete placed outside of the plan diameter(s) of the shaft(s) specified.

## **PIPE UNDERDRAINS FOR STRUCTURES**

Effective: May 17, 2000

Revised: January 1, 2007

Description. This work shall consist of furnishing and installing a pipe underdrain system as shown on the plans, as specified herein, and as directed by the Engineer.

Materials. Materials shall meet the requirements as set forth below:

The perforated pipe drain shall be according to Article 601.02 of the Standard Specifications. Outlet pipes or pipes connecting to a separate storm sewer system shall not be perforated.

The drainage aggregate shall be a combination of one or more of the following gradations, FA1, FA2, CA5, CA7, CA8, CA11, or CA13 thru 15, according to Sections 1003 and 1004 of the Standard Specifications.

The fabric surrounding the drainage aggregate shall be Geotechnical Fabric for French Drains according to Article 1080.05 of the Standard Specifications.

Construction Requirements. All work shall be according to the applicable requirements of Section 601 of the Standard Specifications except as modified below.

The pipe underdrains shall consist of a perforated pipe drain situated at the bottom of an area of drainage aggregate wrapped completely in geotechnical fabric and shall be installed to the lines and gradients as shown on the plans.

Method of Measurement. Pipe Underdrains for Structures shall be measured for payment in feet (meters), in place. Measurement shall be along the centerline of the pipe underdrains. All connectors, outlet pipes, elbows, and all other miscellaneous items shall be included in the measurement. Concrete headwalls shall be included in the cost of Pipe Underdrains for Structures, but shall not be included in the measurement for payment.

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for PIPE UNDERDRAINS FOR STRUCTURES of the diameter specified,. Furnishing and installation of the drainage aggregate, geotechnical fabric, forming holes in structural elements and any excavation required, will not be paid for separately, but shall be included in the cost of the pipe underdrains for structures.

**POROUS GRANULAR EMBANKMENT (SPECIAL)**

Effective: September 28, 2005

Revised: January 1, 2007

Description. This work shall consist of furnishing, and placing porous granular embankment (special) material as detailed on the plans, according to Section 207 except as modified herein.

Materials. The gradation of the porous granular material may be any of the following CA 8 thru CA 18, FA 1 thru FA 4, FA 7 thru FA 9, and FA 20 according to Articles 1003 and 1004.

Construction. The porous granular embankment (special) shall be installed according to Section 207, except that it shall be uncompacted.

Basis of Payment. This work will be paid for at the contract unit price per Cubic Yard (Cubic Meter) for POROUS GRANULAR EMBANKMENT (SPECIAL).

## CEMENT (BDE)

Effective: January 1, 2007

Revise Section 1001 of the Standard Specifications to read:

### "SECTION 1001. CEMENT

**1001.01 Cement Types.** Cement shall be according to the following.

- (a) Portland Cement. Acceptance of portland cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland cement shall be according to ASTM C 150, and shall meet the standard physical and chemical requirements. Type I or Type II may be used for cast-in-place, precast, and precast prestressed concrete. Type III may be used according to Article 1020.04, or when approved by the Engineer. All other cements referenced in ASTM C 150 may be used when approved by the Engineer.

The total of all organic processing additions shall be a maximum of 1.0 percent by weight (mass) of the cement and the total of all inorganic processing additions shall be a maximum of 4.0 percent by weight (mass) of the cement. Organic processing additions shall be limited to grinding aids that improve the flowability of cement, reduce pack set, and improve grinding efficiency. Inorganic processing additions shall be limited to granulated blast-furnace slag according to the chemical requirements of AASHTO M 302 and Class C fly ash according to the chemical requirements of AASHTO M 295.

- (b) Portland-Pozzolan Cement. Acceptance of portland-pozzolan cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland-pozzolan cement shall be according to ASTM C 595 and shall meet the standard physical and chemical requirements. Type IP or I(PM) may be used for cast-in-place, precast, and precast prestressed concrete, except when Class PP concrete is used. The pozzolan constituent for Type IP shall be a maximum of 21 percent of the weight (mass) of the portland-pozzolan cement. All other cements referenced in ASTM C 595 may be used when approved by the Engineer.

For cast-in-place construction, portland-pozzolan cements shall only be used from April 1 to October 15.

The total of all organic processing additions shall be a maximum of 1.0 percent by weight (mass) of the cement. Organic processing additions shall be limited to grinding aids as defined in (a) above. Inorganic processing additions shall not be used.



- (c) Portland Blast-Furnace Slag Cement. Acceptance of portland blast-furnace slag cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland blast-furnace slag cement shall be according to ASTM C 595 and shall meet the standard physical and chemical requirements. Type I(SM) slag-modified portland cement may be used for cast-in-place, precast, and precast prestressed concrete, except when Class PP concrete is used. All other cements referenced in ASTM C 595 may be used when approved by the Engineer.

For cast-in-place construction, portland blast-furnace slag cements shall only be used from April 1 to October 15.

The total of all organic processing additions shall be a maximum of 1.0 percent by weight (mass) of the cement. Organic processing additions shall be limited to grinding aids as defined in (a) above. Inorganic processing additions shall not be used.

- (d) Rapid Hardening Cement. Rapid hardening cement shall be used according to Article 1020.04 or when approved by the Engineer. The cement shall be on the Department's current "Approved List of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs", and shall be according to the following.
- (1) The cement shall have a maximum final set of 25 minutes, according to Illinois Modified ASTM C 191.
  - (2) The cement shall have a minimum compressive strength of 2000 psi (13,800 kPa) at 3.0 hours, and 4000 psi (27,600 kPa) at 24.0 hours, according to Illinois Modified ASTM C 109.
  - (3) The cement shall have a maximum drying shrinkage of 0.050 percent at seven days, according to Illinois Modified ASTM C 596.
  - (4) The cement shall have a maximum expansion of 0.020 percent at 14 days, according to Illinois Modified ASTM C 1038.
  - (5) The cement shall have a minimum 80 percent relative dynamic modulus of elasticity; and shall not have a weight (mass) gain in excess of 0.15 percent or a weight (mass) loss in excess of 1.0 percent, after 100 cycles, according to Illinois Modified AASHTO T 161, Procedure B. At 100 cycles, the specimens are measured and weighed at 73 °F (23 °C).
- (e) Calcium Aluminate Cement. Calcium aluminate cement shall be used when specified by the Engineer. The cement shall meet the standard physical requirements for Type I cement according to ASTM C 150, except the time of setting shall not apply. The

chemical requirements shall be determined according to ASTM C 114 and shall be as follows: minimum 38 percent aluminum oxide ( $Al_2O_3$ ), maximum 42 percent calcium oxide (CaO), maximum 1 percent magnesium oxide (MgO), maximum 0.4 percent sulfur trioxide ( $SO_3$ ), maximum 1 percent loss on ignition, and maximum 3.5 percent insoluble residue.

**1001.02 Uniformity of Color.** Cement contained in single loads or in shipments of several loads to the same project shall not have visible differences in color.

**1001.03 Mixing Brands and Types.** Different brands or different types of cement from the same manufacturing plant, or the same brand or type from different plants shall not be mixed or used alternately in the same item of construction unless approved by the Engineer.

**1001.04 Storage.** Cement shall be stored and protected against damage, such as dampness which may cause partial set or hardened lumps. Different brands or different types of cement from the same manufacturing plant, or the same brand or type from different plants shall be kept separate."

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## **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)**

Effective: September 1, 2000

Revised: January 1, 2007

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

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

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

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

**OVERALL GOAL SET FOR THE DEPARTMENT.** As a requirement of compliance with 49 CFR part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE firms performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

**CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR.** This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. This determination is based on an assessment of the type of work, the location of the work, and the availability of

DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 18 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set forth in this Special Provision:

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

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

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

- (a) In order to assure the timely award of the contract, the as-read low bidder shall submit a Disadvantaged Business Utilization Plan on Department form SBE 2026 within seven working days after the date of letting. To meet the seven day requirement, the bidder may send the Plan by certified mail or delivery service within the seven working day period. If a question arises concerning the mailing date of a Plan, the mailing date will be established by the U.S. Postal Service postmark on the original certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service. It is the responsibility of the bidder to ensure that the postmark or receipt date is affixed within the seven working days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Plan is to be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). It is the responsibility of the bidder to obtain confirmation of telefax delivery. The Department will not accept a Utilization Plan if it does not meet the seven day submittal requirement and the bid will be declared not responsive. In the event the bid is declared not responsive due to a failure to submit a Plan or failure to comply with the bidding procedures set forth herein, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the

project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration or to extend the time for award.

- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number, and telefax number of a responsible official of the bidder designated for purposes of notification of plan approval or disapproval under the procedures of this Special Provision.
- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. The signatures on these forms must be original signatures. All elements of information indicated on the said form shall be provided, including but not limited to the following:
  - (1) The name and address of each DBE to be used;
  - (2) A description, including pay item numbers, of the commercially useful work to be done by each DBE;
  - (3) The price to be paid to each DBE for the identified work specifically stating the quantity, unit price, and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;
  - (4) A commitment statement signed by the bidder and each DBE evidencing availability and intent to perform commercially useful work on the project; and
  - (5) If the bidder is a joint venture comprised of DBE firms and non-DBE firms, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s).
- (d) The contract will not be awarded until the Utilization Plan submitted by the bidder is approved. The Utilization Plan will be approved by the Department if the Plan commits sufficient commercially useful DBE work performance to meet the contract goal. The Utilization Plan will not be approved by the Department if the Plan does not commit sufficient DBE performance to meet the contract goal unless the bidder documents that it made a good faith effort to meet the goal. The good faith procedures of Section VIII of this special provision apply. If the Utilization Plan is not approved because it is deficient in a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no less than a five working day period in order to cure the deficiency.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to

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

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE firm does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE firm does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the full value of all such DBE trucks operated using DBE employed drivers. Goal credit will be limited to the value of the reasonable fee or commission received by the DBE if trucks are leased from a non-DBE company.
- (e) DBE as a material supplier:
  - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
  - (2) 100 percent goal credit for the cost of materials or supplies obtained from a DBE manufacturer.
  - (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

GOOD FAITH EFFORT PROCEDURES. If the bidder cannot obtain sufficient DBE commitments to meet the contract goal, the bidder must document in the Utilization Plan the good faith efforts made in the attempt to meet the goal. This means that the bidder must show

that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which could reasonably be expected to obtain sufficient DBE participation. The Department will consider the quality, quantity, and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts are not good faith efforts; rather, the bidder is expected to have taken those efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.
- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
  - (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime Contractor might otherwise prefer to perform these work items with its own forces.
  - (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
  - (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.  
  
b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the

ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable.

- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
  - (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
  - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
  - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines that the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that a good faith effort has not been made, the Department will notify the bidder of that preliminary determination by contacting the responsible company official designated in the Utilization Plan. The preliminary determination shall include a statement of reasons why good faith efforts have not been found, and may include additional good faith efforts that the bidder could take. The notification will designate a five working day period during which the bidder shall take additional efforts. The bidder is not limited by a statement of additional efforts, but may take other action beyond any stated additional efforts in order to obtain additional DBE commitments. The bidder shall submit an amended Utilization Plan if additional DBE commitments to meet the contract goal are secured. If additional DBE commitments sufficient to meet the contract goal are not secured, the bidder shall report the final good faith efforts made in the time allotted. All additional efforts taken by the bidder will be considered as part of the bidder's good faith efforts. If the bidder is not able to meet the goal after taking additional efforts, the Department will make a pre-final determination of the good faith efforts of the bidder and will notify the designated responsible company official of the reasons for an adverse determination.
- (c) The bidder may request administrative reconsideration of a pre-final determination adverse to the bidder within the five working days after the notification date of the determination by delivering the request to the Department of Transportation, Bureau of



Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The pre-final determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issue of whether an adequate good faith effort was made to meet the contract goal. In addition, the request shall be considered a consent by the bidder to extend the time for award. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal.

- (a) No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.
- (b) All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the Participation Statement. The Contractor shall not terminate for convenience a DBE listed in the Utilization Plan and then perform the work of the terminated DBE with its own forces, those of an affiliate or those of another subcontractor, whether DBE or not, without first obtaining the written consent of the Bureau of Small Business Enterprises to amend the Utilization Plan. If a DBE listed in the Utilization Plan is terminated for reasons other than convenience, or fails to complete its work on the contract for any reason, the Contractor shall make good faith efforts to

find another DBE to substitute for the terminated DBE. The good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, but only to the extent needed to meet the contract goal or the amended contract goal. The Contractor shall notify the Bureau of Small Business Enterprises of any termination for reasons other than convenience, and shall obtain approval for inclusion of the substitute DBE in the Utilization Plan. If good faith efforts following a termination of a DBE for cause are not successful, the Contractor shall contact the Bureau and provide a full accounting of the efforts undertaken to obtain substitute DBE participation. The Bureau will evaluate the good faith efforts in light of all circumstances surrounding the performance status of the contract, and determine whether the contract goal should be amended.

- (c) The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefor to the DBE by the Contractor, but not later than thirty calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Report on Department form SBE 2115 to the Regional Engineer. If full and final payment has not been made to the DBE, the Report shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Plan, the Department will deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages.
- (d) The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.
- (e) Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department.

**DOWEL BARS (BDE)**

Effective: April 1, 2007

Revise the fifth sentence of Article 1006.11(b) of the Standard Specifications to read:

"The bars shall be epoxy coated according to AASHTO M 284, except the thickness of the epoxy shall be 7 to 12 mils (0.18 to 0.30 mm)."

80178

**ELECTRICAL SERVICE INSTALLATION - TRAFFIC SIGNALS (BDE)**

Effective: January 1, 2007

Add the following to Article 805.02 of the Standard Specifications:

“(d) Wood Pole ..... 1069.04”

Add the following to Article 805.03 of the Standard Specifications:

“When a service pole is necessary, it shall be installed according to Article 830.03(c).”

80167

## EQUIPMENT RENTAL RATES (BDE)

Effective: August 2, 2007

Replace the second and third paragraphs of Article 105.07(b)(4)a. of the Standard Specifications with the following:

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

Replace Article 109.04(b)(4) of the Standard Specifications with the following:

“(4) Equipment. Equipment used for extra work shall be authorized by the Engineer. The equipment shall be specifically described, be of suitable size and capacity for the work to be performed, and be in good operating condition. For such equipment, the Contractor will be paid as follows.

- a. Contractor Owned Equipment. Contractor owned equipment will be paid for by the hour using the applicable rate from the “Equipment Watch Rental Rate Blue Book” (Blue Book). The applicable hourly rate is defined as the FHWA hourly rate, from the time period the force account work begins, adjusted for both the model year of the equipment and the Illinois region. The time allowed will be the actual time the equipment is operating on the extra work. For the time required to move the equipment to and from the site of the extra work and any authorized idle (standby) time, payment will be made according to:  $0.5 \times (\text{AHR} - \text{EOC})$ .

Where: AHR = Applicable Hourly Rate (defined above)  
EOC = Estimated Operating Costs per hour (from the Blue Book)

All time allowed shall fall within the working hours authorized for the extra work.

The rates above include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs, overhaul and maintenance of any kind, depreciation, storage, overhead, profits, insurance, and all incidentals. The rates do not include labor.

The Contractor shall submit to the Engineer sufficient information for each piece of equipment and its attachments to enable the Engineer to determine the proper equipment category. If a rate is not established in the Blue Book for a particular piece of equipment, the Engineer will establish a rate for that piece of equipment that is consistent with its cost and use in the industry.

- b. Rented Equipment. Whenever it is necessary for the Contractor to rent equipment to perform extra work, the rental and transportation costs of the

equipment plus five percent for overhead will be paid. In no case shall the rental rates exceed those of established distributors or equipment rental agencies.

All prices shall be agreed to in writing before the equipment is used."

80189

265

## **EROSION AND SEDIMENT CONTROL DEFICIENCY DEDUCTION (BDE)**

Effective: April 1, 2007

Revise Article 105.03(a) of the Standard Specifications to read:

"(a) Erosion and Sediment Control Deficiency Deduction. When the Engineer is notified or determines an erosion and/or sediment control deficiency(s) exists, he/she will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 1 week based on the urgency of the situation and the nature of the deficiency. The Engineer will be the sole judge.

A deficiency may be any lack of repair, maintenance, or implementation of erosion and/or sediment control devices included in the contract, or any failure to comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Site Activities. A deficiency may also be applied to situations where corrective action is not an option such as the failure to participate in a jobsite inspection of the project, failure to install required measures prior to initiating earth moving operations, disregard of concrete washout requirements, or other disregard of the NPDES permit.

If the Contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either \$1000.00 or 0.05 percent of the awarded contract value, whichever is greater. For those deficiencies where corrective action was not an option, the monetary deduction will be immediate and will be valued at one calendar day."

80180

## ERRATA FOR THE 2007 STANDARD SPECIFICATIONS (BDE)

Effective: January 1, 2007

Revised: August 1, 2007

- Page 60 Article 109.07(a). In the second line of the first paragraph change "amount" to "quantity".
- Page 154 Article 312.05. In the second line of the fifth paragraph change "180 °C" to "175 °C".
- Page 207 Article 406.14. In the second line of the second paragraph change "MIXTURE FOR CRACKS, JOINTS, AND FLANGWAYS, of the mixture composition specified;" to "MIXTURE FOR CRACKS, JOINTS, AND FLANGWAYS;".
- Page 237 Article 420.18. In the second line of the first paragraph change "October 15" to "November 1".
- Page 345 Article 505.08(l). In the third line of the first paragraph change "1/8 mm" to "1/8 in.".
- Page 345 Article 505.08(l). In the nineteenth line of the first paragraph change "is" to "in".
- Page 379 Article 512.15. In the first and sixth lines of the third paragraph change "50 percent" to "ten percent".
- Page 383 Article 516.04(b)(1). In the fifth line of the first paragraph change "drillingpouring" to "pouring".
- Page 390 Article 520.02(h). Change "1027.021" to "1027.01".
- Page 398 Article 540.07(b). Add the following two paragraphs after the third paragraph:  
"Excavation in rock will be measured for payment according to Article 502.12.  
Removal and disposal of unstable and/or unsuitable material below plan bedding grade will be measured for payment according to Article 202.07."
- Page 398 Article 540.08. Add the following two paragraphs after the fifth paragraph:  
"Excavation in rock will be paid for according to Article 502.13.  
Removal and disposal of unstable and/or unsuitable material below plan bedding grade will be paid for according to Article 202.08."
- Page 435 Article 542.04(b). Delete the last sentence of the last paragraph.
- Page 465 Article 551.06. In the second line of the first paragraph change "or" to "and/or".



- Page 585 Article 701.19(a). Add "701400" to the second line of the first paragraph.
- Page 586 Article 701.19(c). Delete "701400" from the second line of the first paragraph.
- Page 586 Article 701.19. Add the following subparagraph to this Article:
- "(f) Removal of existing pavement markings and raised reflective pavement markers will be measured for payment according to Article 783.05."
- Page 587 Article 701.20(b). Delete "TRAFFIC CONTROL AND PROTECTION STANDARD 701400;" from the first paragraph.
- Page 588 Article 701.20. Add the following subparagraph to this Article.
- "(j) Removal of existing pavement markings and raised reflective pavement markers will be paid for according to Article 783.06."
- Page 639 Article 805.04. In the first line of the second paragraph change "changes" to "charges".
- Page 762 Article 1020.04. In Table 1 Classes of Portland Cement Concrete and Mix Design Criteria, add to the minimum cement factor for Class PC Concrete "5.65 (TY III)", and add to the maximum cement factor for Class PC Concrete "7.05 (TY III)".
- Page 765 Article 1020.04. In Table 1 Classes of Portland Cement Concrete and Mix Design Criteria (metric), add to the minimum cement factor for Class PC Concrete "335 (TY III)", and add to the maximum cement factor for Class PC Concrete "418 (TY III)".
- Page 800 Article 1030.05(a)(12). Revise "Dust Collection Factor" to "Dust Correction Factor".
- Page 800 Article 1030.05(a)(14). Revise the first occurrence of Article 1030.05(a)(14) to Article 1030.05(a)(13).
- Page 800 Article 1030.05(a). Add to the list of QC/QA documents "(16) Calibration of Equipment for Asphalt Content Determination".
- Page 809 Article 1030.05. Revise the subparagraph "(a) Quality Assurance by the Engineer." to read "(e) Quality Assurance by the Engineer."
- Page 889 Article 1069.02(a)(2). In the third line of the first paragraph add "stainless steel" in front of "screws".
- Page 889 Article 1069.02(b). Delete the third paragraph.
- Page 890 Article 1069.02(c). Delete subparagraph (c).

Page 946 Article 1080.03(a)(1). In the third line of the first paragraph revise "(300 μm)" to "(600 μm)".

Page 963 Article 1083.02(b). In the second line of the first paragraph revise "ASTM D 4894" to "ASTM D 4895".

Page 1076 In the Index of Pay Items delete the pay item "BITUMINOUS SURFACE REMOVAL – BUTT JOINT".

80168

**HOT-MIX ASPHALT EQUIPMENT, SPREADING AND FINISHING MACHINE (BDE)**

Effective: January 1, 2005

Revised: January 1, 2007

Revise the fourth paragraph of Article 1102.03 of the Standard Specifications to read:

“The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to uniformly place a non-segregated mixture in front of the screed. The distribution system shall have chain curtains, deflector plates, and /or other devices designed and built by the paver manufacturer to prevent segregation during distribution of the mixture from the hopper to the paver screed. The Contractor shall submit a written certification that the devices recommended by the paver manufacturer to prevent segregation have been installed and are operational. Prior to paving, the Contractor, in the presence of the Engineer, shall visually inspect paver parts specifically identified by the manufacturer for excessive wear and the need for replacement. The Contractor shall supply a completed check list to the Engineer noting the condition of the parts. Worn parts shall be replaced. The Engineer may require an additional inspection prior to placement of the surface course or at other times throughout the work.”

80142

## LEGAL REQUIREMENTS TO BE OBSERVED (BDE)

Effective: August 1, 2007

Revise Article 107.01 of the Standard Specifications to read:

**"107.01 Legal Requirements to be Observed.** The Contractor warrants that it is, and that it shall keep fully informed of all legal requirements found in Federal, State, and local laws, ordinances, rules and regulations, and all orders, decrees, notices of violation or enforcement actions issued by any judicial or administrative body, board, agency, or tribunal having any jurisdiction or authority, that in any manner affect those engaged or employed to perform the work of the contract, or that affect the performance and conduct of the work of the contract. Unless otherwise provided in the contract, the Contractor shall obtain and keep current all permits and licenses, and give all notices required for the performance of the work of the contract that may be required by all such laws, ordinances, rules, regulations, orders, decrees, notices, and actions. The Contractor shall observe and obey all such laws, ordinances, rules, regulations, orders, decrees, notices, and actions; and shall indemnify and save harmless the State, the Department and all of its officers, agents, employees, and servants against any claim, liability, fine, or monetary assessment arising from the breach of this article or the violation of any such law, ordinance, rule, regulation, order, decree, notice or action, whether by the Contractor, a subcontractor, a supplier of material or service, others engaged by the Contractor, or the employees of any of them. Except as expressly mandated by law or regulation, or otherwise provided in the contract, the Department shall not be responsible for monitoring the Contractor's compliance with any law, ordinance, rule, regulation, order, decree, notice, or action. However, on noticing any violation of a legal requirement, the Department will notify the Contractor and the agency responsible for enforcement. The Department will cooperate with other agencies in their efforts to enforce legal requirements and may assist any such agency's effort to obtain Contractor compliance. The Contractor shall comply fully with any and all requests made by the Department within the time specified. The obligations of the Contractor under this article shall not be released or diminished by the issuance of any notice of violation or enforcement action to or in the name of the Department."

80187

## **MULTILANE PAVEMENT PATCHING (BDE)**

Effective: November 1, 2002

Pavement broken and holes opened for patching shall be completed prior to weekend or holiday periods. Should delays of any type or for any reason prevent the completion of the work, temporary patches shall be constructed. Material able to support the average daily traffic and meeting the approval of the Engineer shall be used for the temporary patches. The cost of furnishing, placing, maintaining, removing and disposing of the temporary work, including traffic control, shall be the responsibility of the Contractor.

80082

## NOTCHED WEDGE LONGITUDINAL JOINT (BDE)

Effective: July 1, 2004

Revised: January 1, 2007

Description. This work shall consist of constructing a notched wedge longitudinal joint between successive passes of hot-mix asphalt (HMA) binder course that is placed in 2 1/4 in. (57 mm) or greater lifts on pavement that is open to traffic.

The notched wedge longitudinal joint shall consist of a 1 to 1 1/2 in. (25 to 38 mm) vertical notch at the centerline or lane line, a 9 to 12 in. (230 to 300 mm) uniform taper extending into the open lane, and a second 1 to 1 1/2 in. (25 to 38 mm) vertical notch (see Figure 1).

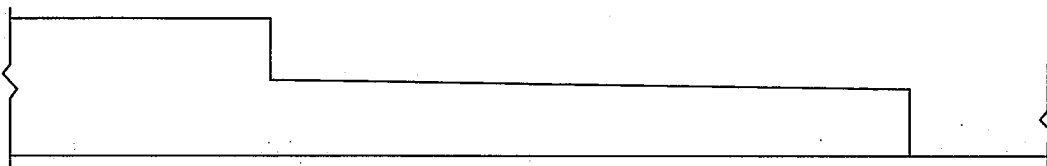


Figure 1

Equipment. Equipment shall meet the following requirements:

- a) Strike Off Device. The strike off device shall produce the notches and wedge of the joint and shall be adjustable. The device shall be attached to the paver and shall not restrict operation of the main screed.
- b) Wedge Roller. The wedge roller shall have a minimum diameter of 12 in. (300 mm), a minimum weight of 50 lb/in. (9 N/mm) of width, and a width equal to the wedge. The roller shall be attached to the paver.

## CONSTRUCTION REQUIREMENTS

Joint Construction. The notched wedge longitudinal joint shall be formed by the strike off device on the paver. The wedge shall then be compacted by the joint roller.

Compaction. Initial compaction of the wedge shall be as close to final density as possible. Final density requirements of the entire binder mat, including the wedge, shall remain unchanged.

Prime Coat. Immediately prior to placing the adjacent lift of binder, the bituminous material specified for the mainline prime coat shall be applied to the entire face of the notched wedge longitudinal joint. The material shall be uniformly applied at a rate of 0.05 to 0.1 gal/sq yd (0.2 to 0.5 L/sq m).

Method of Measurement. The notched wedge longitudinal joint will not be measured for payment.

| The prime coat will be measured for payment according to Article 406.13 of the Standard Specifications.

Basis of Payment. The work of constructing the notched wedge longitudinal joint will not be paid for separately but shall be considered as included in the cost of the HMA binder course being constructed.

| The prime coat will be paid for according to Article 406.14 of the Standard Specifications.

80129

**NOTIFICATION OF REDUCED WIDTH (BDE)**

Effective: April 1, 2007

Add the following after the first paragraph of Article 701.06 of the Standard Specifications:

"Where the clear width through a work zone with temporary concrete barrier will be 16.0 ft (4.88 m) or less, the Contractor shall notify the Engineer at least 21 days in advance of implementing the traffic control for that restriction."

80182

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## **PAYMENTS TO SUBCONTRACTORS (BDE)**

Effective: June 1, 2000

Revised: January 1, 2006

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts and to set the time for such payments.

State law also addresses the timing of payments to be made to subcontractors and material suppliers. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, requires that when a Contractor receives any payment from the Department, the Contractor shall make corresponding, proportional payments to each subcontractor and material supplier performing work or supplying material within 15 calendar days after receipt of the Department payment. Section 7 of the Act further provides that interest in the amount of two percent per month, in addition to the payment due, shall be paid to any subcontractor or material supplier by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors and material suppliers throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the State Prompt Payment Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

When progress payments are made to the Contractor according to Article 109.07 of the Standard Specifications, the Contractor shall make a corresponding payment to each subcontractor and material supplier in proportion to the work satisfactorily completed by each subcontractor and for the material supplied to perform any work of the contract. The proportionate amount of partial payment due to each subcontractor and material supplier throughout the contracting chain shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors and material suppliers shall be paid by the Contractor within 15 calendar days after the receipt of payment from the Department. The Contractor shall not hold retainage from the subcontractors. These obligations shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers; and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain. Any payment or portion of a payment subject to this provision may only be withheld from the subcontractor or material supplier to whom it is due for reasonable cause.

This Special Provision does not create any rights in favor of any subcontractor or material supplier against the State or authorize any cause of action against the State on account of any payment, nonpayment, delayed payment, or interest claimed by application of the State Prompt Payment Act. The Department will not approve any delay or postponement of the 15 day requirement except for reasonable cause shown after notice and hearing pursuant to Section

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| 7(b) of the State Prompt Payment Act. State law creates other and additional remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond according to the Public Construction Bond Act, 30 ILCS 550.

80022

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## PLANTING WOODY PLANTS (BDE)

Effective: January 1, 2006

Revise the first and second paragraphs of Article 253.14 of the Standard Specifications to read:

**"253.14 Period of Establishment.** Prior to being accepted, the plants shall endure a period of establishment. This period shall begin in June and end in September of the same year. To qualify for inspection, plants shall have been in place, in a live healthy condition, on or before June 1 of the year of inspection. To be acceptable, plants shall be in a live healthy condition, representative of their species, at the time of inspection in the month of September.

When the planting work is performed by a subcontractor, this delay in inspection and acceptance of plants shall not delay acceptance of the entire project and final payment due if the Contractor requires and receives from the subcontractor a third party performance bond naming the Department as obligee in the full amount of the planting quantities listed in the contract, multiplied by their contract unit prices. The bond shall be executed prior to acceptance and final payment of the non-planting items and shall be in full force and effect until final inspection and acceptance of all plants including replacements. Execution of the third party bond shall be the option of the prime Contractor."

Revise Article 253.16 of the Standard Specifications to read:

**"253.16 Method of Measurement.** This work will be measured for final payment, in place, after the period of establishment. Trees, shrubs, and vines will be measured as each individual plant. Seedlings will be measured in units of 100 plants."

Revise Article 253.17 of the Standard Specifications to read:

**"253.17 Basis of Payment.** This work will be paid for at the contract unit price per each for TREES, SHRUBS, and VINES, of the species, root type, and plant size specified; and per unit for SEEDLINGS. Payment will be made according to the following schedule.

- (a) Initial Payment. Upon planting, 75 percent of the pay item(s) will be paid.
- (b) Final Payment. Upon inspection and acceptance of the plant material, or upon execution of a third party bond, the remaining 25 percent of the pay item(s) will be paid."

80148

**PLASTIC BLOCKOUTS FOR GUARDRAIL (BDE)**

Effective: November 1, 2004

| Revised: January 1, 2007

Add the following to Article 630.02 of the Standard Specifications:

| "(g) Plastic Blockouts (Note 1.)

| Note 1. Plastic blockouts may be used in lieu of wood blockouts for steel plate beam guardrail. The plastic blockouts shall be the minimum dimensions shown on the plans and shall be on the Department's approved list."

80134

## PORTLAND CEMENT CONCRETE PLANTS (BDE)

Effective: January 1, 2007

Add the following to Article 1020.11(a) of the Standard Specifications.

- “(9) Use of Multiple Plants in the Same Construction Item. The Contractor may simultaneously use central-mixed, truck-mixed, and shrink-mixed concrete from more than one plant, for the same construction item, on the same day, and in the same pour. However, the following criteria shall be met.
- a. Each plant shall use the same cement, finely divided minerals, aggregates, admixtures, and fibers.
  - b. Each plant shall use the same mix design. However, material proportions may be altered slightly in the field to meet slump and air content criteria. Field water adjustments shall not result in a difference that exceeds 0.02 between plants for water/cement ratio. The required cement factor for central-mixed concrete shall be increased to match truck-mixed or shrink-mixed concrete, if the latter two types of mixed concrete are used in the same pour.
  - c. The maximum slump difference between deliveries of concrete shall be 3/4 in. (19 mm) when tested at the jobsite. If the difference is exceeded, but test results are within specification limits, the concrete may be used. The Contractor shall take immediate corrective action and shall test subsequent deliveries of concrete until the slump difference is corrected. For each day, the first three truck loads of delivered concrete from each plant shall be tested for slump by the Contractor. Thereafter, when a specified test frequency for slump is to be performed, it shall be conducted for each plant at the same time.
  - d. The maximum air content difference between deliveries of concrete shall be 1.5 percent when tested at the jobsite. If the difference is exceeded, but test results are within specification limits, the concrete may be used. The Contractor shall take immediate corrective action and shall test subsequent deliveries of concrete until the air content difference is corrected. For each day, the first three truck loads of delivered concrete from each plant shall be tested for air content by the Contractor. Thereafter, when a specified test frequency for air content is to be performed, it shall be conducted for each plant at the same time.
  - e. Strength tests shall be performed and taken at the jobsite for each plant. When a specified strength test is to be performed, it shall be conducted for each plant at the same time. The difference between plants for their mean strength shall not exceed 450 psi (3100 kPa) compressive and 80 psi (550 kPa) flexural. The strength standard deviation for each plant shall not exceed 650 psi (4480 kPa) compressive and 110 psi (760 kPa) flexural. The mean and standard deviation requirements shall apply to the test of record. If the strength difference requirements are exceeded, the Contractor shall take corrective action.

- f. The maximum haul time difference between deliveries of concrete shall be 15 minutes. If the difference is exceeded, but haul time is within specification limits, the concrete may be used. The Contractor shall take immediate corrective action and check subsequent deliveries of concrete until the haul time difference is corrected."

80170

**PRECAST CONCRETE HANDLING HOLES (BDE)**

Effective: January 1, 2007

Add the following to Article 540.02 of the Standard Specifications:

“(g) Handling Hole Plugs..... 1042.16”

Add the following paragraph after the sixth paragraph of Article 540.06 of the Standard Specifications:

“Handling holes shall be filled with a precast concrete plug and sealed with mastic or mortar, or filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation. When metal lifting inserts are used, their sockets shall be filled with mastic or mortar.”

Add the following to Article 542.02 of the Standard Specifications:

“(ee) Handling Hole Plugs ..... 1042.16”

Revise the fifth paragraph of Article 542.04(d) of the Standard Specifications to read:

“Handling holes in concrete pipe shall be filled with a precast concrete plug and sealed with mastic or mortar; or filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation.”

Add the following to Article 550.02 of the Standard Specifications:

“(o) Handling Hole Plugs..... 1042.16”

Replace the fourth sentence of the fifth paragraph of Article 550.06 of the Standard Specifications with the following:

“Handling holes in concrete pipe shall be filled with a precast concrete plug and sealed with mastic or mortar; or filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation.”

Add the following to Article 602.02 of the Standard Specifications:

“(p) Handling Hole Plugs..... 1042.16(a)”

Replace the fifth sentence of the first paragraph of Article 602.07 of the Standard Specifications with the following:

“Handling holes shall be filled with a precast concrete plug and sealed with mastic or mortar. The plug shall not project beyond the inside surface after installation. When metal lifting inserts are used, their sockets shall be filled with mastic or mortar.”

Add the following to Section 1042 of the Standard Specifications:

“**1042.16 Handling Hole Plugs.** Plugs for handling holes in precast concrete products shall be as follows.

- (a) **Precast Concrete Plug.** The precast concrete plug shall have a tapered shape and shall have a minimum compressive strength of 3000 psi (20,700 kPa) at 28 days.
- (b) **Polyethylene Plug.** The polyethylene plug shall have a “mushroom” shape with a flat round top and a stem with three different size ribs. The plug shall fit snugly and cover the handling hole.

The plug shall be according to the following.

Mechanical Properties	Test Method	Value (min.)
Flexural Modulus	ASTM D 790	3300 psi (22,750 kPa)
Tensile Strength (Break)	ASTM D 638	1600 psi (11,030 kPa)
Tensile Strength (Yield)	ASTM D 638	1200 psi (8270 kPa)

Thermal Properties	Test Method	Value (min.)
Brittle Temperature	ASTM D 746	-49 °F (-45 °C)
Vicat Softening Point	ASTM D 1525	194 °F (90 °C)”

80171



## RECLAIMED ASPHALT PAVEMENT (RAP) (BDE)

Effective: January 1, 2007

Revised: August 1, 2007

In Article 1030.02(g), delete the last sentence of the first paragraph in (Note 2).

Revise Section 1031 of the Standard Specifications to read:

### "SECTION 1031. RECLAIMED ASPHALT PAVEMENT

**1031.01 Description.** Reclaimed asphalt pavement (RAP) is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded hot-mix asphalt (HMA) pavement. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.

**1031.02 Stockpiles.** The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP shall be added to the pile after the pile has been sealed. Stockpiles shall be sufficiently separated to prevent intermingling at the base. Stockpiles shall be identified by signs indicating the type as listed below (i.e. "Homogeneous Surface").

Prior to milling, the Contractor shall request the District to provide verification of the quality of the RAP to clarify appropriate stockpile.

- (a) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures and represent:  
1) the same aggregate quality, but shall be at least C quality; 2) the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag); 3) similar gradation; and 4) similar asphalt binder content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogenous" with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.
- (b) Conglomerate 5/8. Conglomerate 5/8 RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate 5/8 RAP shall be processed prior to testing by crushing to where all RAP shall pass the 5/8 in. (16 mm) or smaller screen. Conglomerate 5/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (c) Conglomerate 3/8. Conglomerate 3/8 RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least B quality. This RAP may have an

inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate 3/8 RAP shall be processed prior to testing by crushing to where all RAP shall pass the 3/8 in. (9.5 mm) or smaller screen. Conglomerate 3/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

- (d) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from Class I, Superpave (High or Low ESAL), HMA (High or Low ESAL), or equivalent mixtures. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (e) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

**1031.03 Testing.** When used in HMA, the RAP shall be sampled and tested either during or after stockpiling.

For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

- (a) Testing Conglomerate 3/8. In addition to the requirements above, conglomerate 3/8 RAP shall be tested for maximum theoretical specific gravity ( $G_{mm}$ ) at a frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

- (b) Evaluation of Test Results. All of the extraction results shall be compiled and averaged for asphalt binder content and gradation and, when applicable  $G_{mm}$ . Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	Homogeneous / Conglomerate	Conglomerate "D" Quality
1 in. (25 mm)		± 5 %
1/2 in. (12.5 mm)	± 8 %	± 15 %
No. 4 (4.75 mm)	± 6 %	± 13 %
No. 8 (2.36 mm)	± 5 %	
No. 16 (1.18 mm)		± 15 %
No. 30 (600 $\mu$ m)	± 5 %	
No. 200 (75 $\mu$ m)	± 2.0 %	± 4.0 %
Asphalt Binder	± 0.4 % <sup>1/</sup>	± 0.5 %
$G_{mm}$	± 0.02 <sup>2/</sup>	

1/ The tolerance for conglomerate 3/8 shall be ± 0.3 %.

2/ Applies only to conglomerate 3/8. When variation of the  $G_{mm}$  exceeds the ± 0.02 tolerance, a new conglomerate 3/8 stockpile shall be created which will also require an additional mix design.

If more than 20 percent of the individual sieves are out of the gradation tolerances, or if more than 20 percent of the asphalt binder content test results fall outside the appropriate tolerances, the RAP shall not be used in HMA unless the RAP representing the failing tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the Illinois Test Procedure, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

**1031.04 Quality Designation of Aggregate in RAP.** The quality of the RAP shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

- (a) RAP from Class I, Superpave (High ESAL), or HMA (High ESAL) surface mixtures are designated as containing Class B quality coarse aggregate.
- (b) RAP from Superpave (Low ESAL)/HMA (Low ESAL) IL-19.0L binder and IL-9.5L surface mixtures are designated as Class D quality coarse aggregate.
- (c) RAP from Class I, Superpave (High ESAL), or HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.

- (d) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

**1031.05 Use of RAP in HMA.** The use of RAP in HMA shall be as follows.

- (a) Coarse Aggregate Size. The coarse aggregate in all RAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
- (b) Steel Slag Stockpiles. RAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) surface mixtures only.
- (c) Use in HMA Surface Mixtures (High and Low ESAL). RAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be either homogeneous or conglomerate 3/8, in which the coarse aggregate is Class B quality or better.
- (d) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be homogeneous, conglomerate 5/8, or conglomerate 3/8, in which the coarse aggregate is Class C quality or better.
- (e) Use in Shoulders and Subbase. RAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be homogeneous, conglomerate 5/8, conglomerate 3/8, or conglomerate DQ.
- (f) The use of RAP shall be a contractor's option when constructing HMA in all contracts. When the contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in the table for a given N Design.

Max RAP Percentage

HMA MIXTURES <sup>1/, 3/</sup>	MAXIMUM % RAP			
	Ndesign	Binder/Leveling Binder	Surface	Polymer Modified
30	30	30	10	10
50	25	15	10	10
70	15 / 25 <sup>2/</sup>	10 / 15 <sup>2/</sup>	10	10
90	10	10	10	10
105	10	10	10	10

1/ For HMA Shoulder and Stabilized Sub-Base (HMA) N-30, the amount of RAP shall not exceed 50% of the mixture.

2/ Value of Max % RAP if 3/8 RAP is utilized.

- 3/ When RAP exceeds 20%, the high & low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25% RAP would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28).

**1031.06 HMA Mix Designs.** At the Contractor's option, HMA mixtures may be constructed utilizing RAP material meeting the above detailed requirements.

RAP designs shall be submitted for volumetric verification. If additional RAP stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP stockpile and HMA mix design, and meets all of the requirements herein, the additional RAP stockpiles may be used in the original mix design at the percent previously verified.

**1031.07 HMA Production.** The coarse aggregate in all RAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

To remove or reduce agglomerated material, a scalping screen, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If the RAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP and either switch to the virgin aggregate design or submit a new RAP design. When producing mixtures containing conglomerate 3/8 RAP, a positive dust control system shall be utilized.

HMA plants utilizing RAP shall be capable of automatically recording and printing the following information.

(a) Dryer Drum Plants.

- (1) Date, month, year, and time to the nearest minute for each print.
- (2) HMA mix number assigned by the Department.
- (3) Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- (4) Accumulated dry weight of RAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- (5) Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.

- (6) Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.
- (7) Residual asphalt binder in the RAP material as a percent of the total mix to the nearest 0.1 percent.
- (8) Aggregate and RAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAP are printed in wet condition.)

(b) Batch Plants.

- (1) Date, month, year, and time to the nearest minute for each print.
- (2) HMA mix number assigned by the Department.
- (3) Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).
- (4) Mineral filler weight to the nearest pound (kilogram).
- (5) RAP weight to the nearest pound (kilogram).
- (6) Virgin asphalt binder weight to the nearest pound (kilogram).
- (7) Residual asphalt binder in the RAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

**1031.08 RAP in Aggregate Surface Course and Aggregate Shoulders.** The use of RAP in aggregate surface course and aggregate shoulders shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Other". The testing requirements of Article 1031.03 shall not apply.
- (b) Gradation. One hundred percent of the RAP material shall pass the 1 1/2 in. (37.5 mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded or single sized will not be accepted."

80172

**REFLECTIVE SHEETING ON CHANNELIZING DEVICES (BDE)**

Effective: April 1, 2007

Revise the seventh paragraph of Article 1106.02 of the Standard Specifications to read:

“At the time of manufacturing, the retroreflective prismatic sheeting used on channelizing devices shall meet or exceed the initial minimum coefficient of retroreflection as specified in the following table. Measurements shall be conducted according to ASTM E 810, without averaging. Sheeting used on cones, drums and flexible delineators shall be reboundable as tested according to ASTM D 4956. Prestriped sheeting for rigid substrates on barricades shall be white and orange.

Initial Minimum Coefficient of Retroreflection candelas/foot candle/sq ft (candelas/lux/sq m) of material				
Observation Angle (deg.)	Entrance Angle (deg.)	White	Orange	Fluorescent Orange
0.2	-4	365	160	150
0.2	+30	175	80	70
0.5	-4	245	100	95
0.5	+30	100	50	40”

Revise the first sentence of the first paragraph of Article 1106.02(c) of the Standard Specifications to read:

“Barricades and vertical panels shall have alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass.”

Revise the third sentence of the first paragraph of Article 1106.02(d) of the Standard Specifications to read:

“The bottom panels shall be 8 x 24 in. (200 x 600 mm) with alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass.”

80183

## REINFORCEMENT BARS (BDE)

Effective: November 1, 2005

Revised: January 1, 2007

Revise Article 1006.10(a) of the Standard Specifications to read:

“(a) Reinforcement Bars. Reinforcement bars will be accepted according to the current Bureau of Materials and Physical Research Policy Memorandum, “Reinforcement Bar and Dowel Bar Plant Certification Procedure”. The Department will maintain an approved list of producers.

(1) Reinforcement Bars (Non-Coated). Reinforcement bars shall be according to ASTM A 706 (A 706M), Grade 60 (420) for deformed bars and the following.

a. Chemical Composition. The chemical composition of the bars shall be according to the following table.

CHEMICAL COMPOSITION		
Element <sup>1/</sup>	Heat Analysis (% maximum)	Product Analysis (% maximum)
Carbon	0.30	0.33
Manganese	1.50	1.56
Phosphorus	0.035	0.045
Sulfur	0.045	0.055
Silicon	0.50	0.55
Nickel	2/	2/
Chromium	2/	2/
Molybdenum	2/	2/
Copper	2/	2/
Titanium	2/	2/
Vanadium	2/	2/
Columbium	2/	2/
Aluminum	2/, 3/	2/, 3/
Tin <sup>4/</sup>	0.040	0.044

Note 1/. The bars shall not contain any traces of radioactive elements.

Note 2/. There is no composition limit but the element must be reported.

Note 3/. If aluminum is not an intentional addition to the steel for deoxidation or killing purposes, residual aluminum content need not be reported.



Note 4/. If producer bar testing indicates an elongation of 15 percent or more and passing of the bend test, the tin composition requirement may be waived.

- b. Heat Numbers. Bundles or bars at the construction site shall be marked or tagged with heat identification numbers of the bar producer.
  - c. Guided Bend Test. Bars may be subject to a guided bend test across two pins which are free to rotate, where the bending force shall be centrally applied with a fixed or rotating pin of a certain diameter as specified in Table 3 of ASTM A 706 (A 706M). The dimensions and clearances of this guided bend test shall be according to ASTM E 190.
  - d. Spiral Reinforcement. Spiral reinforcement shall be deformed or plain bars conforming to the above requirements or cold-drawn steel wire conforming to AASHTO M 32.
- (2) Epoxy Coated Reinforcement Bars. Epoxy coated reinforcement bars shall be according to Article 1006.10(a)(1) and shall be epoxy coated according to AASHTO M 284 (M 284M) and the following.
- a. Certification. The epoxy coating applicator shall be certified under the Concrete Reinforcing Steel Institute's (CRSI) Epoxy Plant Certification Program.
  - b. Coating Thickness. The thickness of the epoxy coating shall be 7 to 12 mils (0.18 to 0.30 mm). When spiral reinforcement is coated after fabrication, the thickness of the epoxy coating shall be 7 to 20 mils (0.18 to 0.50 mm).
  - c. Cutting Reinforcement. Reinforcement bars may be sheared or sawn to length after coating, providing the end damage to the coating does not extend more than 0.5 in. (13 mm) back and the cut is patched before any visible rusting appears. Flame cutting will not be permitted."

80151

## RETROREFLECTIVE SHEETING, NONREFLECTIVE SHEETING, AND TRANSLUCENT OVERLAY FILM FOR HIGHWAY SIGNS (BDE)

Effective: April 1, 2007

General. This special provision covers retroreflective sheeting and translucent overlay films intended for application on new or refurbished aluminum. The sheeting serves as the reflectorized background for sign messages and as cutout legends and symbols applied to the reflectorized background. Messages may be applied in opaque black or transparent colors.

This special provision also covers nonreflective sheeting for application on new or refurbished aluminum, and as material for cutout legends and symbols applied to the reflectorized background.

All material furnished under this specification shall have been manufactured within 18 months of the delivery date. All material shall be supplied by the same manufacturer.

Retroreflective Sheeting Properties. Retroreflective sheeting shall consist of a flexible, colored, prismatic, or glass lens elements adhered to a synthetic resin, encapsulated by a flexible, transparent plastic having a smooth outer surface and shall meet the following requirements.

Only suppliers whose products have been tested and approved in the Department's periodic Sheeting Study will be eligible to supply material. All individual batches and or lots of material shall be tested and approved by the Department. The Department reserves the right to sample and test delivered materials according to Federal Specification LS-300.

- (a) Adhesive. The sheeting shall have a Class 1, pre-coated, pressure sensitive adhesive according to ASTM D 4956. The adhesive shall have a protective liner that is easily removed when tested according to ASTM D 4956. The adhesive shall be capable of being applied to new or refurbished aluminum and reflectorized backgrounds without additional adhesive.
- (b) Color. The sheeting shall be uniform in color and devoid of streaks throughout the length of each roll. The color shall conform to the latest appropriate standard color tolerance chart issued by the U.S. Department of Transportation, Federal Highway Administration and to the daytime and nighttime color requirements of ASTM D 4956. Sheeting used for side by side overlay applications shall have a Hunter Lab Delta E of less than 3.
- (c) Coefficient of Retroreflection. When tested according to ASTM E 810, without averaging, the sheeting shall have a minimum coefficient of retroreflection as shown in the following tables. The brightness of the sheeting when totally wet shall be a minimum of 90 percent of the values shown when tested according to the standard rainfall test specified in Section 7.10.1 of AASHTO M 268-84.

Type A Sheeting  
Minimum Coefficient of Retroreflection  
candelas/foot candle/sq ft (candelas/lux/sq m) of material

Type A

Observation Angle (deg.)	Entrance Angle (deg.)	White	Yellow	Orange	Red	Green	Blue	Brown
0.2	-4	250	170	100	45	45	20	12
0.2	+30	150	100	60	25	25	12	8.5
0.5	-4	95	65	30	15	15	8	5
0.5	+30	75	50	25	10	10	5	3.5

Type AA Sheeting  
 Minimum Coefficient of Retroreflection  
 candelas/foot candle/sq ft (candelas/lux/sq m) of material

Type AA (0 and 90 degree rotation)

Observation Angle (deg.)	Entrance Angle (deg.)	White	Yellow	Red	Green	Blue	FO
0.2	-4	800	660	215	80	43	200
0.2	+30	400	340	100	35	20	120
0.5	-4	200	160	45	20	9.8	80
0.5	+30	100	85	26	10	5.0	50

Type AA (45 degree rotation)

Observation Angle (deg.)	Entrance Angle (deg.)	Yellow	FO
0.2	-4	550	165
0.2	+30	130	45
0.5	-4	145	70
0.5	+30	70	40

Type AP Sheeting  
 Minimum Coefficient of Retroreflection  
 candelas/foot candle/sq ft (candelas/lux/sq m) of material

Type AP

Observation Angle (deg.)	Entrance Angle (deg.)	White	Yellow	Red	Green	Blue	Brown	FO
0.2	-4	550	425	100	75	50	30	275
0.2	+30	200	150	40	35	25	15	90
0.5	-4	300	250	60	35	25	20	150
0.5	+30	100	70	20	20	10	5	50

Type AZ Sheeting  
Minimum Coefficient of Retroreflection  
candelas/foot candle/sq ft (candelas/lux/sq m) of material

Type AZ (0 degree rotation)

Observation Angle (deg.)	Entrance Angle (deg.)	White	Yellow	Red	Green	Blue	FYG	FY
0.2	-4	430	350	110	45	20	325	240
0.2	+30	235	140	60	24	11	200	150
0.5	-4	250	200	60	25	10	235	165
0.5	+30	170	135	40	19	7	105	75
1.0	-4	70	45	10	10	4	70	30
1.0	+30	30	20	7	5	2.5	45	15

Type AZ (90 degree rotation)

Observation Angle (deg.)	Entrance Angle (deg.)	White	Yellow	Red	Green	Blue	FYG	FY
0.2	-4	320	250	100	45	20	300	220
0.2	+30	235	140	40	24	11	200	150
0.5	-4	240	200	60	25	10	235	165
0.5	+30	100	85	20	10	7	80	75
1.0	-4	30	30	7	5	4	65	20
1.0	+30	15	15	5	2	2	30	10

(d) Gloss. The sheeting surface shall exhibit a minimum 85 degree gloss-meter rating of 50 when tested according to ASTM D 523.

(e) Durability. When processed and applied, the sheeting shall be weather resistant.

Accelerated weathering testing will be performed for 1000 hours (300 hours for orange/FO) according to ASTM G 151. The testing cycle will consist of 8 hours of light at 140 °F (60 °C), followed by 4 hours of condensation at 104 °F (40 °C). Following accelerated weathering, the sheeting shall exhibit a minimum of 80 percent of its initial minimum coefficient of retroreflection as listed in the previous tables.

Outdoor weathering will entail an annual evaluation of material placed in an outdoor rack with a 45 degree angle and a southern sun exposure. The sheeting will be evaluated for five years. Following weathering, the test specimens will be cleaned by immersing them in a five percent hydrochloric acid solution for 45 seconds, then rinsed with water and blotted dry with a soft clean cloth. Following cleaning, the applied sheeting shall show no appreciable discoloration, cracking, streaking, crazing, blistering, or dimensional change. The sheeting shall exhibit a Hunter Lab Delta E of 5 or less when compared to the original.

- (f) Shrinkage. When tested according to ASTM D 4956, the sheeting shall not shrink in any dimension more than 1/32 in. (0.8 mm) in ten minutes and not more than 1/8 in. (3 mm) in 24 hours.
- (g) Workability. The sheeting shall show no cracking, scaling, pitting, blistering, edge lifting, inter-film splitting, curling, or discoloration when processed and applied using mutually acceptable processing and application procedures.
- (h) Splices. A single roll of sheeting shall contain a maximum of four splices per 50 yd (45 m) length. The sheeting shall be overlapped a minimum of 3/16 in. (5 mm) at each splice.
- (i) Adhesive Bond. The sheeting shall form a durable bond to smooth, corrosion and weather-resistant surfaces and adhere securely when tested according to ASTM D 4956.
- (j) Positionability. Sheeting, with ASTM D 4956 Class 3 adhesive, used for manufacturing cutout legends and borders shall provide sufficient positionability during the fabrication process to permit removal and reapplication without damage to either the legend or sign background and shall have a plastic liner suitable for use on bed cutting machines. Thereafter, all other adhesive and bond requirements contained in the specification shall apply.

Positionability shall be verified by cutting 4 in. (100 mm) letters E, I, K, M, S, W, and Y out of the positionable material. The letters shall then be applied to a sheeted aluminum blank using a single pass of a two pound roller. The letters shall sit for five minutes and then a putty knife shall be used to lift a corner. The thumb and fore finger shall be used to slowly pull the lifted corner to lift letters away from the sheeted aluminum. The letters shall not tear or distort when removed.

- (k) Thickness. The thickness of the sheeting without the protective liner shall be less than or equal to 0.015 in. (0.4 mm), or 0.025 in. (0.6 mm) for prismatic material.
- (l) Processing. The sheeting shall permit cutting and color processing according to the sheeting manufacturer's specifications at temperatures of 60 to 100 °F (15 to 38 °C) and within a relative humidity range of 20 to 80 percent. The sheeting shall be heat resistant and permit forced curing without staining the applied or unapplied sheeting at temperatures recommended by the manufacturer. The sheeting shall be solvent resistant and capable of being cleaned with VM&P naphtha, mineral spirits, and turpentine.

Transparent color and opaque black inks shall be single component and low odor. The inks shall dry within eight hours and not require clear coating. After color processing on white sheeting, the sheeting shall show no appreciable discoloration, cracking, streaking, crazing, blistering, or dimensional change when tested for durability (e). The ink on the weathered, prepared panel shall exhibit a Hunter Lab Delta E of 5 or less when compared to the original.

Transparent color electronic cutting films shall be acrylic. After application to white sheeting, the films shall show no appreciable discoloration, cracking, streaking, crazing, blistering, or dimensional change when tested for durability (e). The films on the weathered, prepared panel shall exhibit a Hunter Lab Delta E of 5 or less when compared to the original.

Transparent colors screened, or transparent acrylic electronic cutting films, on white sheeting, shall have a minimum initial coefficient of retroreflection values of 50 percent for yellow and red, and a minimum 70 percent for green, blue, and brown of the 0.2 degree observation angle/-4.0 degree entrance angle values as listed in the previous tables for the color being applied. After durability testing, the colors shall retain a minimum 80 percent of the initial coefficient of retroreflection.

- (m) Identification. The sheeting shall have a distinctive overall pattern in the sheeting unique to the manufacturer. If material orientation is required for optimum retroreflectivity, permanent orientation marks shall be incorporated into the face of the sheeting. Neither the overall pattern nor the orientation marks shall interfere with the reflectivity of the sheeting.
- (n) Packaging. Both ends of each box shall be clearly labeled with the sheeting type, color, adhesive type, manufacturer's lot number, date of manufacture, and supplier's name. Material Safety Data Sheets and technical bulletins for all materials shall be furnished to the Department with each shipment.

Nonreflective Sheeting Properties. Nonreflective sheeting shall consist of a flexible, pigmented cast vinyl film having a smooth, flat outer surface and shall meet the following requirements.

The Department reserves the right to sample and test delivered materials according to Federal Specification LS-300.

- (a) Adhesive. The sheeting shall have a Class 1, pre-coated, pressure sensitive adhesive according to ASTM D 4956. The adhesive shall have a protective liner that is easily removed when tested according to ASTM D 4956. The adhesive shall be capable of being applied to new or refurbished aluminum and reflectorized backgrounds without additional adhesive.
- (b) Color. The sheeting shall be uniform in color and devoid of streaks throughout the length of each roll.
- (c) Gloss. The sheeting shall exhibit a minimum 85 degree gloss-meter rating of 40 when tested according to ASTM D 523.
- (d) Durability. Applied sheeting that has been vertically exposed to the elements for seven years shall show no appreciable discoloration, cracking, crazing, blistering, delamination, or loss of adhesion. A slight amount of chalking is permitted but the sheeting shall not support fungus growth.

(e) Testing. Test panels shall be prepared by applying the sheeting to 6 1/2 x 6 1/2 in. (165 x 165 mm) pieces of aluminum according to the manufacturer's specifications. The edges of the panel shall be trimmed evenly and aged 48 hours at 70 to 90 °F (21 to 32 °C). Shrinkage and immersion testing shall be as follows.

(1) Shrinkage. The sheeting shall not shrink more than 1/64 in. (0.4 mm) from any panel edge when subjected to a temperature of 150 °F (66 °C) for 48 hours and shall be sufficiently heat resistant to retain adhesion after one week at 150 °F (66 °C).

(2) Immersion Testing. The sheeting shall show no appreciable decrease in adhesion, color, or general appearance when examined one hour after being immersed to a depth of 2 or 3 in. (50 or 75 mm) in the following solutions at 70 to 90 °F (21 to 32 °C) for specified times.

Solution	Immersion Time (hours)
Reference Fuel (M I L-F-8799A) (15 parts xylol and 85 parts mineral spirits by weight)	1
Distilled Water	24
SAE No. 20 Motor Oil	24
Antifreeze (1/2 ethylene glycol, 1/2 distilled water)	24

(f) Adhesive Bond: The sheeting shall form a durable bond to smooth, corrosion and weather-resistant surfaces and adhere securely when tested according to ASTM D 4956.

(g) Thickness. The thickness of the sheeting without the protective liner shall be a maximum of 0.005 in. (0.13 mm).

(h) Cutting. Material used on bed cutting machines shall have a smooth plastic liner.

(i) Identification. The sheeting shall have a distinctive overall pattern in the sheeting unique to the manufacturer. If material orientation is required for optimum retroreflectivity, permanent orientation marks shall be incorporated into the face of the sheeting. Neither the overall pattern nor the orientation marks shall interfere with the reflectivity of the sheeting.

(j) Packaging. Both ends of each box shall be clearly labeled with the sheeting type, color, adhesive type, manufacturer's lot number, date of manufacture, and supplier's name. Material Safety Data Sheets and technical bulletins for all materials shall be furnished to the Department with each shipment.

## SELF-CONSOLIDATING CONCRETE FOR CAST-IN-PLACE CONSTRUCTION (BDE)

Effective: November 1, 2005

Revised: January 1, 2007

Definition. Self-consolidating concrete is a flowable mixture that does not require mechanical vibration for consolidation.

Usage. Self-consolidating concrete may be used for cast-in-place concrete construction items involving Class MS, DS, and SI concrete.

Materials. Materials shall be according to Section 1021 of the Standard Specifications.

Mix Design Criteria. Article 1020.04 of the Standard Specifications shall apply, except as follows:

- (a) The cement factor shall be according to Article 1020.04 of the Standard Specifications. If the maximum cement factor is not specified, it shall not exceed 7.05 cwt/cu yd (418 kg/cu m). The cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used.
- (b) The maximum allowable water/cement ratio shall be according to Article 1020.04 of the Standard Specifications or 0.44, whichever is lower.
- (c) The slump requirements shall not apply.
- (d) The coarse aggregate gradations shall be CA 13, CA 14, CA 16, or a blend of these gradations. CA 11 may be used when the Contractor provides satisfactory evidence to the Engineer that the mix will not segregate. The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used.
- (e) The slump flow range shall be  $\pm 2$  in. ( $\pm 50$  mm) of the Contractor target value, and within the overall Department range of 20 in. (510 mm) minimum to 28 in. (710 mm) maximum.
- (f) The visual stability index shall be a maximum of 1.
- (g) The J-ring value shall be a maximum of 4 in. (100 mm). The Contractor may specify a lower maximum in the mix design.
- (h) The L-box blocking ratio shall be a minimum of 60 percent. The Contractor may specify a higher minimum in the mix design.
- (i) The column segregation index shall be a maximum 15 percent.
- (j) The hardened visual stability index shall be a maximum of 1.



Test Methods. Illinois Test Procedures SCC-1, SCC-2, SCC-3, SCC-4, SCC-5, SCC-6, and Illinois Modified AASHTO T 22, 23, 121, 126, 141, 152, 177, 196, and 309 shall be used for testing of self-consolidating concrete mixtures.

Mix Design Submittal. The Contractor's Level III PCC Technician shall submit a mix design according to the "Portland Cement Concrete Level III Technician" course manual, except target slump information is not applicable and will not be required. However, a slump flow target range shall be submitted. In addition, the design mortar factor may exceed 1.10 and durability test data will be waived.

A J-ring value shall be submitted if a lower mix design maximum will apply. An L-box blocking ratio shall be submitted if a higher mix design minimum will apply. The Contractor shall also indicate applicable construction items for the mix design.

| Trial mixture information will be required by the Engineer. A trial mixture is a batch of concrete tested by the Contractor to verify the Contractor's mix design will meet specification requirements. Trial mixture information shall include test results as specified in the "Portland Cement Concrete Level III Technician" course manual. Test results shall also include slump flow, visual stability index, J-ring value, L-box blocking ratio, column segregation index, and hardened visual stability index. For the trial mixture, the slump flow shall be near the midpoint of the proposed slump flow target range.

| Trial Batch. A minimum 2 cu yd (1.5 cu m) trial batch shall be produced, and the self-consolidating concrete admixture dosage proposed by the Contractor shall be used. The slump flow shall be within 1.0 in. (25 mm) of the maximum slump flow range specified by the Contractor, and the air content shall be within the top half of the allowable specification range.

The trial batch shall be scheduled a minimum of 21 calendar days prior to anticipated use and shall be performed in the presence of the Engineer.

The Contractor shall provide the labor, equipment, and materials to test the concrete. The mixture will be evaluated by the Engineer for strength, air content, slump flow, visual stability index, J-ring value, L-box blocking ratio, column segregation index, and hardened visual stability index.

Upon review of the test data from the trial batch, the Engineer will verify or deny the use of the mix design and notify the Contractor. Verification by the Engineer will include the Contractor's target slump flow range. If applicable, the Engineer will verify the Contractor's maximum J-ring value and minimum L-box blocking ratio.

| A new trial batch will be required whenever there is a change in the source of any component material, proportions beyond normal field adjustments, dosage of the self-consolidating concrete admixture, batch sequence, mixing speed, mixing time, or as determined by the Engineer. The testing criteria for the new trial batch will be determined by the Engineer.

When necessary, the trial batches shall be disposed of according to Article 202.03 of the Standard Specifications.

Mixing Portland Cement Concrete. In addition to Article 1020.11 of the Standard Specifications, the mixing time for central-mixed concrete shall not be reduced as a result of a mixer performance test. Truck-mixed or shrink-mixed concrete shall be mixed in a truck mixer for a minimum of 100 revolutions.

Wash water, if used, shall be completely discharged from the drum or container before the succeeding batch is introduced.

The batch sequence, mixing speed, and mixing time shall be appropriate to prevent cement balls and mix foaming for central-mixed, truck-mixed, and shrink-mixed concrete.

Falsework and Forms. In addition to Articles 503.05 and 503.06 of the Standard Specifications, the Contractor shall consider the fluid nature of the concrete for designing the falsework and forms. Forms shall be tight to prevent leakage of fluid concrete.

Placing and Consolidating. Concrete placement and consolidation shall be according to Article 503.07 of the Standard Specifications, except as follows:

Revise the third paragraph of Article 503.07 of the Standard Specifications to read:

“Open troughs and chutes shall extend as nearly as practicable to the point of deposit. The drop distance of concrete shall not exceed 5 ft (1.5 m). If necessary, a tremie shall be used to meet this requirement. The maximum distance of horizontal flow from the point of deposit shall be 25 ft (7.6 m), unless approved otherwise by the Engineer. For drilled shafts, free fall placement will not be permitted.”

Delete the seventh, eighth, ninth, and tenth paragraphs of Article 503.07 of the Standard Specifications.

Add to the end of the eleventh paragraph of Article 503.07 of the Standard Specifications the following:

“Concrete shall be rodded with a piece of lumber, conduit, or vibrator if the material has lost its fluidity prior to placement of additional concrete. The vibrator shall be the pencil head type with a maximum diameter or width of 1 in. (25 mm). Any other method for restoring the fluidity of the concrete shall be approved by the Engineer.”

Quality Control by Contractor at Plant. The specified test frequencies for aggregate gradation, aggregate moisture, air content, unit weight/yield, and temperature shall be performed as indicated in the contract plans.

Slump flow, visual stability index, and J-ring or L-box tests shall be performed as needed to control production. The column segregation index test and hardened visual stability index test will not be required to be performed at the plant.

Quality Control by Contractor at Jobsite. The specified test frequencies for air content, strength, and temperature shall be performed as indicated in the contract plans.

Slump flow, visual stability index, and J-ring or L-box tests shall be performed on the first two truck deliveries of the day, and every 50 cu yd (40 cu m) thereafter. The Contractor shall select either the J-ring or L-box test for jobsite testing.

The column segregation index test will not be required to be performed at the jobsite. The hardened visual stability index test shall be performed on the first truck delivery of the day, and every 300 cu yd (230 cu m) thereafter. Slump flow, visual stability index, J-ring value or L-box blocking ratio, air content, and concrete temperature shall be recorded for each hardened visual stability index test.

The Contractor shall retain all hardened visual stability index cut cylinder specimens until the Engineer notifies the Contractor that the specimens may be discarded.

If mix foaming or other potential detrimental material is observed during placement or at the completion of the pour, the material shall be removed while the concrete is still plastic.

Quality Assurance by Engineer at Plant. For air content and aggregate gradation, quality assurance independent sample testing and split sample testing will be performed as indicated in the contract plans.

For slump flow, visual stability index, and J-ring or L-box tests, quality assurance independent sample testing and split sample testing will be performed as determined by the Engineer.

Quality Assurance by Engineer at Jobsite. For air content and strength, quality assurance independent sample testing and split sample testing will be performed as indicated in the contract plans.

For slump flow, visual stability index, J-ring or L-box, and hardened visual stability index tests, quality assurance independent sample testing will be performed as determined by the Engineer.

For slump flow and visual stability index quality assurance split sample testing, the Engineer will perform tests at the beginning of the project on the first three tests performed by the Contractor. Thereafter, a minimum of ten percent of total tests required of the Contractor will be performed per plant, which will include a minimum of one test per mix design. The acceptable limit of precision will be 1.5 in. (40 mm) for slump flow and a limit of precision will not apply to the visual stability index.

For the J-ring or the L-box quality assurance split sample testing, a minimum of 80 percent of the total tests required of the Contractor will be witnessed by the Engineer per plant, which will

include a minimum of one witnessed test per mix design. The Engineer reserves the right to conduct quality assurance split sample testing. The acceptable limit of precision will be 1.5 in. (40 mm) for the J-ring value and ten percent for the L-box blocking ratio.

For each hardened visual stability index test performed by the Contractor, the cut cylinders shall be presented to the Engineer for determination of the rating. The Engineer reserves the right to conduct quality assurance split sample testing. A limit of precision will not apply to the hardened visual stability index.

80152

## SELF-CONSOLIDATING CONCRETE FOR PRECAST PRODUCTS (BDE)

Effective: July 1, 2004

Revised: January 1, 2007

Definition. Self-consolidating concrete is a flowable mixture that does not require mechanical vibration for consolidation.

Usage. Self-consolidating concrete may be used for precast concrete products.

Materials. Materials shall be according to Section 1021 of the Standard Specifications.

Mix Design Criteria. The mix design criteria shall be as follows:

- (a) The minimum cement factor shall be according to Article 1020.04 of the Standard Specifications. If the maximum cement factor is not specified, it shall not exceed 7.05 cwt/cu yd (418 kg/cu m).
- (b) The maximum allowable water/cement ratio shall be according to Article 1020.04 of the Standard Specifications or 0.44, whichever is lower.
- (c) The slump requirements of Article 1020.04 of the Standard Specifications shall not apply.
- (d) The coarse aggregate gradations shall be CA 13, CA 14, CA 16, or a blend of these gradations. CA 11 may be used when the Contractor provides satisfactory evidence to the Engineer that the mix will not segregate. The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used.
- (e) The slump flow range shall be  $\pm 2$  in. ( $\pm 50$  mm) of the Contractor target value, and within the overall Department range of 20 in. (510 mm) minimum to 28 in. (710 mm) maximum.
- (f) The visual stability index shall be a maximum of 1.
- (g) The J-ring value shall be a maximum of 4 in. (100 mm). The Contractor may specify a lower maximum in the mix design.
- (h) The L-box blocking ratio shall be a minimum of 60 percent. The Contractor may specify a higher minimum in the mix design.
- (i) The column segregation index shall be a maximum 15 percent.
- (j) The hardened visual stability index shall be a maximum of 1.

Placing and Consolidating. The maximum distance of horizontal flow from the point of deposit shall be 25 ft (7.6 m), unless approved otherwise by the Engineer.

Concrete shall be rodded with a piece of lumber, conduit, or vibrator if the material has lost its fluidity prior to placement of additional concrete. The vibrator shall be the pencil head type with a maximum diameter or width of 1 in. (25 mm). Any other method for restoring the fluidity of the concrete shall be approved by the Engineer.

Mix Design Approval. The Contractor shall obtain mix design approval according to the Department's Policy Memorandum "Quality Control/Quality Assurance Program for Precast Concrete Products".

80132

## STEEL COST ADJUSTMENT (BDE) (RETURN FORM WITH BID)

Effective: April 2, 2004

Revised: April 1, 2007

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of steel cost adjustments.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)  
Structural Steel  
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), frames and grates, and other miscellaneous items will be subject to a steel cost adjustment when the pay item they are used in has a contract value of \$10,000 or greater.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) Evidence that increased or decreased steel costs have been passed on to the Contractor.
- (b) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.
- (c) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars

Q = quantity of steel incorporated into the work, in lb (kg)

D = price factor, in dollars per lb (kg)

$$D = CBP_M - CBP_L$$

Where:  $CBP_M$  = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the American Metal Market (AMM) for the day the steel is shipped from the mill. The indices will be converted from dollars per ton to dollars per lb (kg).

$CBP_L$  = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the AMM for the day the contract is let. The indices will be converted from dollars per ton to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the  $CBP_M$  will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the  $CBP_L$  and  $CBP_M$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(CBP_L - CBP_M) \div CBP_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.



**Attachment**

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Mesh Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 - 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 - 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 - 15.2 m)	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 - 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 - 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 - 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 - 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)

Return With Bid

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
STEEL COST ADJUSTMENT**

The bidder shall submit this completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of steel cost adjustments. After award, this form, when submitted shall become part of the contract.

Contract No.: \_\_\_\_\_

Company Name: \_\_\_\_\_

**Contractor's Option:**

Is your company opting to include this special provision as part of the contract plans?

Yes  No

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

80127

## STEEL PLATE BEAM GUARDRAIL (BDE)

Effective: November 1, 2005

Revised: August 1, 2007

Revise the first paragraph of Article 1006.25 of the Standard Specifications to read:

**"1006.25 Steel Plate Beam Guardrail.** Steel plate beam guardrail, including bolts, nuts, and washers, shall be according to AASHTO M 180. The guardrail shall be Class A, with a Type II galvanized coating; except the weight (mass) of the coating for each side of the guardrail shall be at least 2.00 oz/sq ft (610 g/sq m). The coating will be determined for each side of the guardrail using the average of at least three non-destructive test readings taken on that side of the guardrail. The minimum average thickness for each side shall be 3.4 mils (86  $\mu$ m)."

80153

## **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

## TEMPORARY EROSION CONTROL (BDE)

Effective: November 1, 2002

Revised: August 1, 2007

Revise the third paragraph of Article 280.03 of the Standard Specifications to read:

"Erosion control systems shall be installed prior to beginning any activities which will potentially create erodible conditions. Erosion control systems for areas outside the limits of construction such as storage sites, plant sites, waste sites, haul roads, and Contractor furnished borrow sites shall be installed prior to beginning soil disturbing activities at each area. These offsite systems shall be designed by the Contractor and be subject to the approval of the Engineer."

Add the following paragraph after the third paragraph of Article 280.03 of the Standard Specifications:

"The temporary erosion and sediment control systems shown on the plans represent the minimum systems anticipated for the project. Conditions created by the Contractor's operations, or for the Contractor's convenience, which are not covered by the plans, shall be protected as directed by the Engineer at no additional cost to the Department. Revisions or modifications of the erosion and sediment control systems shall have the Engineer's written approval."

Revise the second sentence of the first paragraph of Article 280.04(a) of the Standard Specifications to read:

"Temporary ditch checks shall be constructed with rolled excelsior, products from the Department's approved list, or with aggregate when specified."

Add the following paragraph after the ninth paragraph of Article 280.07 of the Standard Specifications:

"Temporary or permanent erosion control systems required for areas outside the limits of construction will not be measured for payment."

Delete the tenth (last) paragraph of Article 280.08 of the Standard Specifications.

Revise Article 1081.15(f) of the Standard Specifications to read:

"(f) Rolled Excelsior. Rolled excelsior shall consist of an excelsior fiber filling totally encased inside netting and sealed with metal clips or knotted at the ends. Each roll shall be a minimum of 20 in. (500 mm) in diameter and a minimum of 10 ft (3 m) in length. Each 10 ft (3 m) roll shall have a minimum weight (mass) of 30 lbs (13.6 kg). The excelsior fiber filling shall be weed free. At least 80 percent of the fibers shall be a minimum of 6 in. (150 mm) in length. The fiber density shall be a minimum of 1.38 lb/cu ft (22 kg/cu m). The netting shall be composed of a polyester or

polypropylene material which retains 70 percent of its strength after 500 hours of exposure to sunlight. The maximum opening of the net shall be 1 x 1 in. (25 x 25 mm)."

80087

## THERMOPLASTIC PAVEMENT MARKINGS (BDE)

Effective: January 1, 2007

Revise Article 1095.01(a)(2) of the Standard Specifications to read:

- "(2) Pigment. The pigment used for the white thermoplastic compound shall be a high-grade pure (minimum 93 percent) titanium dioxide (TiO<sub>2</sub>). The white pigment content shall be a minimum of ten percent by weight and shall be uniformly distributed throughout the thermoplastic compound.

The pigments used for the yellow thermoplastic compound shall not contain any hazardous materials listed in the Environmental Protection Agency Code of Federal Regulations (CFR) 40, Section 261.24, Table 1. The combined total of RCRA listed heavy metals shall not exceed 100 ppm when tested by X-ray fluorescence spectroscopy. The pigments shall also be heat resistant, UV stable and color-fast yellows, golds, and oranges, which shall produce a compound which shall match Federal Standard 595 Color No. 33538. The pigment shall be uniformly distributed throughout the thermoplastic compound."

Revise Article 1095.01(b)(1)e. of the Standard Specifications to read:

- "e. Daylight Reflectance and Color. The thermoplastic compound after heating for four hours  $\pm$  five minutes at  $425 \pm 3$  °F ( $218.3 \pm 2$  °C) and cooled at 77 °F (25 °C) shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degree circumferential/zero degree geometry, illuminant C, and two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

White: Daylight Reflectance .....75 percent min.

\*Yellow: Daylight Reflectance .....45 percent min.

\*Shall meet the coordinates of the following color tolerance chart.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456"

Revise Article 1095.01(b)(1)k. of the Standard Specifications to read:

- "k. Accelerated Weathering. After heating the thermoplastic for four hours  $\pm$  five minutes at  $425 \pm 3$  °F ( $218.3 \pm 2$  °C) the thermoplastic shall be applied to a steel wool abraded aluminum alloy panel (Federal Test Std. No. 141, Method 2013) at a film thickness of 30 mils (0.70 mm) and allowed to cool for 24 hours at room temperature. The coated panel shall be subjected to accelerated weathering

using the light and water exposure apparatus (fluorescent UV - condensation type) for 75 hours according to ASTM G 53 (equipped with UVB-313 lamps).

The cycle shall consist of four hours UV exposure at 122 °F (50 °C) followed by four hours of condensation at 104 °F (40 °C). UVB 313 bulbs shall be used. At the end of the exposure period, the panel shall not exceed 10 Hunter Lab Delta E units from the original material."

80176



**TRAFFIC SIGNAL GROUNDING (BDE)**

Effective: April 1, 2006

Revised: January 1, 2007

Revise Article 873.02 of the Standard Specifications to read:

**"873.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Electric Cable – Signal, Lead-in, Communication, Service, and Equipment Grounding Conductor .....	1076.04
(b) Electrical Raceway Materials .....	1088.01"

Revise Article 873.04 of the Standard Specifications to read:

**"873.04 Grounding System.** All traffic signal circuits shall include an equipment grounding conductor according to Article 801.04. The equipment grounding conductor shall consist of a continuous, green, insulated conductor Type XLP, No. 6 AWG, stranded copper installed in raceways and bonded to each metal enclosure (handhole, post, mast arm pole, signal cabinet, etc.). All clamps shall be bronze or copper, UL approved.

A grounding cable with connectors shall be installed between each handhole cover and frame. The grounding cable shall be looped over cable hooks installed in the handholes and 5 ft (1.5 m) of extra cable shall be provided between the frame and cover.

All equipment grounding conductors shall terminate at the ground bus in the controller cabinet. The neutral conductor and the equipment grounding conductor shall be connected in the service installation. At no other point in the traffic signal system shall the neutral and equipment grounding conductors be connected."

Revise Article 873.05 of the Standard Specifications to read:

**"873.05 Method of Measurement.** Electric cable will be measured for payment in feet (meters) in place. The length of measurement shall be the distance horizontally and vertically measured between the changes in direction, including cables in mast arms, mast arm poles, signal posts, and extra cable length as specified in Article 873.03. The vertical cable length shall be measured according to the following schedule.

Location	Cable Length
Foundation (signal post, mast arm pole, controller cabinet)	3 ft (1 m)
Mast Arm Pole (mast arm mounted signal head)	20 ft (6 m)
Mast Arm Pole (bracket mounted signal head attached to mast arm pole)	13 ft (4 m)
Signal Post (bracket or post mounted signal head)	13 ft (4 m)
Pedestrian Push Button	6 ft (2 m)"

Add the following Article to Section 873 of the Standard Specifications:

**"873.06 Basis of Payment.** This work will be paid for at the contract unit price per foot (meter) for ELECTRIC CABLE, of the method of installation (IN TRENCH, IN CONDUIT, or AERIAL SUSPENDED), of the type, size, and number of conductors specified.

The type specified will indicate the method of installation and whether the electric cable is Service, Signal, Lead-in, Communication, or Equipment Grounding Conductor."

Revise the heading of Article 1076.04 of the Standard Specifications to read:

**"1076.04 Electric Cable – Signal, Lead-in, Communication, Service, and Equipment Grounding Conductor."**

Add the following paragraph to the end of Article 1076.04 of the Standard Specifications:

"(e) Equipment Grounding Conductor. The cross linked polyethylene (XLP) insulated conductor shall be according to Articles 1066.02 and 1066.03. The stranded copper conductor shall be No. 6 AWG and the insulation color shall be green."

80161

**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 6. 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

**WATER BLASTER WITH VACUUM RECOVERY (BDE)**

Effective: April 1, 2006

Revised: January 1, 2007

Add the following to Article 783.02 of the Standard Specifications.

“(c) Water Blaster with Vacuum Recovery .....1101.12”

Revise Article 1101.12 of the Standard Specifications to read.

**“1101.12 Water Blaster with Vacuum Recovery.** The water blaster shall remove the stripe from the pavement using a high pressurized water spray with a vacuum recovery system to provide a clean, almost dry surface, without the use of a secondary cleanup process. The removal shall be to the satisfaction of the Engineer. The equipment shall contain a storage system that allows for the storage of the wastewater while retaining the debris. The operator shall be in immediate control of the blast head.”

80163

**WORKING DAYS (BDE)**

Effective: January 1, 2002

The Contractor shall complete the work within \* working days.

80071

\* The completion date for this contract is July 3, 2009.

The Contractor will be allowed to complete all clean-up work and punch list items within 15 guaranteed working days after the completion date for opening the roadway to traffic.

This contract also includes interim completion dates. All Pre-Stage work, as described on the Maintenance of Traffic Typical Sections and Notes sheets, shall be completed and the contractor shall have all existing lanes safely open to traffic by 11:59 P.M. on March 14, 2008. All Stage 1 work, as described on the Maintenance of Traffic Typical Sections and Notes sheets, shall be completed and the contractor shall open the roadway to two-way traffic by 11:59 P.M. on August 31, 2008. All Stage 2A work, as described on the Maintenance of Traffic Typical Sections and Notes sheets, shall be completed and the contractor shall open the roadway to two-way traffic by 11:59 P.M. on November 28, 2008.

**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

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 contractors' own organization (23 CFR 635).

- a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.
- b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a

whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract.

Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

## **VIII. SAFETY: ACCIDENT PREVENTION**

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S. C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

## **IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification,

distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

**NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS**

18 U.S.C. 1020 reads as follows:

*“Whoever, being an officer, agent or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or*

*Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or*

*Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;*

*Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both.”*

**X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more).

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of

any communication from the Director, Office of Federal Activities, EPA indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

**XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms “covered transaction,” “debarred,” “suspended,” “ineligible,” “lower tier covered transaction,” “participant,” “person,” “primary covered transaction,” “principal,” “proposal,” and “voluntarily excluded,” as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled

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"Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded from Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

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### **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Primary Covered Transactions**

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
- d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

### **2. Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealing.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily



excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

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**Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion-Lower Tier Covered Transactions:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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**XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**MINIMUM WAGES FOR FEDERAL AND FEDERALLY  
ASSISTED CONSTRUCTION CONTRACTS**

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.

**NOTICE**

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at <http://www.dot.state.il.us/desenv/delett.html>.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at <http://www.dot.state.il.us/desenv/subsc.html>.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.