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 that 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

Technical Questions about downloading these files may be directed to Tim Garman (217)524-1642 or 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?

Questions Regarding	**Call**
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.

RETURN WITH BID

Proposal Submitted By
Name
Address
City

44

Letting November 17, 2006

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. 83869
KANE County
Section 00-00059-00-BR (Batavia)
Route FAU 1441 (Wilson Street)
Project ACBRM-ACTE-HD-7003(949)
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

Checked by F

(Printed by authority of the State of Illinois)

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

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?

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

RETURN WITH BID

Illinois Department of Transportation

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. 83869
KANE County
Section 00-00059-00-BR (Batavia)
Project ACBRM-ACTE-HD-7003(949)
Route FAU 1441 (Wilson Street)
District 1 Construction Funds

Remove existing three span, reinforced concrete filled spandrel arch bridge and construct a three span variable depth continuous cast-in-place post-tensioned slab structure, remove existing abutments and replace with concrete full height abutments supported by micropiles, retaining walls, storm sewer, water main, curb and gutter, concrete pavement reconstruction, pedestrian walk paths, lighting, sidewalks and architectural enhancements over the Fox River in Batavia.

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.

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:

Amount of Bid			Proposal Guaranty	Amount of Bid			Proposal Guaranty
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)

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-91-333-00
PPS NBR - 1-10166-0000

ILLINOIS DEPARTMENT OF TRANSPORTATION
SCHEDULE OF PRICES
CONTRACT NUMBER - 83869

RUN DATE - 10/20/06
RUN TIME - 183313

COUNTY NAME	CODE	DIST	SECTION NUMBER	PROJECT NUMBER	ROUTE
KANE	089	01	00-00059-00-BR (BATAVIA)	ACBRM-ACTE-H7003/949/000	FAU 1441

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
A2004824	T-GLED TRI-I SK 3	EACH	6.000			X =		
XX001490	GATE VALVES 8	EACH	2.000			X =		
XX004145	DRINKING FOUNTAIN REL	EACH	1.000			X =		
XX004782	TEMP BIT PAVT	SQ YD	302.000			X =		
XX005043	ORNAMENTAL SIGN POST	EACH	10.000			X =		
XX005077	SAN SEW 8 T2 DI CL52	FOOT	155.000			X =		
XX005128	STRIP SEAL EXP JT ASY	FOOT	159.000			X =		
XX005517	CONCRETE FILL	CU YD	354.000			X =		
XX005534	SIDEWALK DRAIN	EACH	5.000			X =		
XX005953	TEM CHAINLINK FENCE 8	FOOT	800.000			X =		
XX005968	TURBIDITY CURTAIN	SQ YD	728.000			X =		
XX006585	CURB STOP & BOX 3/4"	EACH	2.000			X =		
XX006737	RE PC CONC SIDEWLK VD	SQ FT	636.000			X =		
XX006739	CONCRETE PAVERS TYP A	SQ FT	4,064.000			X =		
XX006740	CONCRETE PAVERS TYP B	SQ FT	5,441.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
XX006741	CONCRETE PAVERS TYP C	SQ FT	43.000	X			=		
XX006742	REM EX CON ARCH BRDGE	L SUM	1.000	X			=		
XX006743	BAR COUPLERS	EACH	190.000	X			=		
XX006744	MICROPILE 200 TON	EACH	45.000	X			=		
XX006745	F & I POST-TEN STRAND	POUND	133,690.000	X			=		
XX006746	RUSTICATION FINISH I	SQ FT	2,299.000	X			=		
XX006747	RUSTICATION FINISH II	SQ FT	1,465.000	X			=		
XX006748	RIVERWALK RAILING	FOOT	442.000	X			=		
XX006749	BRIDGE RAILING	FOOT	416.000	X			=		
XX006750	OUTLOOK RAILING	FOOT	140.000	X			=		
XX006751	STAIR RAILING	FOOT	202.000	X			=		
XX006752	REM REINSTAL MONUMENT	L SUM	1.000	X			=		
XX006753	DRP MAN A2-2 4 SP F&L	EACH	1.000	X			=		
XX006754	DRP MAN A2-3 5 SP F&L	EACH	1.000	X			=		
XX006755	STOP VALVE 3/4 & BOX	EACH	2.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
XX006756	WALL HYDRANTS	EACH	2.000	X			=		
XX006757	LUM SV PED PC 100W	EACH	8.000	X			=		
XX006758	LUM SV PED PC 50W	EACH	9.000	X			=		
XX006759	UNDERPAS LUM FLUOR 60	EACH	8.000	X			=		
XX006760	UNDR STR LUM INCAN 75	EACH	2.000	X			=		
XX006761	JUN BOX EM S 4X4X3	EACH	14.000	X			=		
XX006762	LIGHT POLE FDN 15D	FOOT	89.250	X			=		
XX006763	LT P A 14PT PLNTR ARM	EACH	8.000	X			=		
XX006764	LT P A 14 POST TOP	EACH	6.000	X			=		
XX006765	LT P A 10 POST TOP	EACH	3.000	X			=		
XX006766	GFI RECEPTACL BOX 120	EACH	14.000	X			=		
XX006767	LIQ FLEX MET CON 3/4	FOOT	50.000	X			=		
XX006768	MAINTAIN LIGHTING SYS	L SUM	1.000	X			=		
XX006769	TREE REMOVAL SPECIAL	EACH	9.000	X			=		
XX006770	T-GINKGO BILOBA AG 3	EACH	4.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
XX006771	ARC CON DIES SPL	EACH	35.000	X			=		
XX006772	ARC CON BRDG CURB SPL	FOOT	405.000	X			=		
XX006773	ARC CON OUTLK CURB SP	FOOT	119.000	X			=		
XX006774	ARC CON POST BASE SPL	EACH	16.000	X			=		
XX006775	ARC CON BNCH PLANT SY	EACH	4.000	X			=		
XX006776	ARC CON SW STAIR SYS	L SUM	1.000	X			=		
XX006777	ARC CON SE STAIR SYS	L SUM	1.000	X			=		
XX006778	ARC CON NE STAIR SYS	L SUM	1.000	X			=		
XX006779	WATER SERV LINE 6	FOOT	251.000	X			=		
XX104800	COMB CC&G TBV.12	FOOT	572.000	X			=		
X0301766	DRILL-GROUT #6 T-BAR	EACH	79.000	X			=		
X0320591	SAN MAN REMOVED	EACH	1.000	X			=		
X0321907	SS 2 WAT MN 12	FOOT	70.000	X			=		
X0321908	SS 2 WAT MN 15	FOOT	39.000	X			=		
X0322256	TEMP INFO SIGNING	SQ FT	80.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
X0322671	STAB CONSTR ENTRANCE	SQ YD	260.000	X			=		
X0322782	SAN SEW PVC SDR 26 8	FOOT	75.000	X			=		
X0322925	ELCBL C TRACER 14 1C	FOOT	870.000	X			=		
X0323353	GATE VALVES 10	EACH	2.000	X			=		
X0323396	HP CONC STRUCTURE	CU YD	1,698.000	X			=		
X0323830	DRAINAGE SCUPPR DS-11	EACH	8.000	X			=		
X0323859	DOWNSPOUT CONNECTION	EACH	1.000	X			=		
X0323988	TEMP SOIL RETEN SYSTM	SQ FT	3,100.000	X			=		
X0539800	TREE GRATES	EACH	10.000	X			=		
X0840000	SAN SEW REMOV 8	FOOT	242.000	X			=		
X4066414	BC SC SUPER "C" N50	TON	15.000	X			=		
X4066426	BC SC SUPER "D" N70	TON	146.000	X			=		
X4066740	LEV BIND HM SUPER N70	TON	1.000	X			=		
X4066770	LEV BIND MM SUPER N70	TON	121.000	X			=		
X5000800	FLOAT BRNG FIXED 800K	EACH	10.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
X5005800	FLO BRG GUID EXP 800K	EACH	10.000	X			=		
X7015000	CHANGEABLE MESSAGE SN	CAL MO	44.000	X			=		
X8710020	FOCC62.5/125 MM12SM12	FOOT	870.000	X			=		
X8900010	TEMP TR SIG INTERCON	EACH	1.000	X			=		
Z0002600	BAR SPLICERS	EACH	1,162.000	X			=		
Z0006100	BR DK LATEX CON OVLAY	SQ YD	1,322.000	X			=		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000	X			=		
Z0018900	DRILL-GROUT DOW BARS	EACH	108.000	X			=		
Z0030260	IMP ATTN TEMP FRN TL3	EACH	4.000	X			=		
Z0030330	IMP ATTN REL FRD TL3	EACH	2.000	X			=		
Z0076600	TRAINEES	HOUR	2,000.000	X	0	.80	=	1,600	.00
20201200	REM & DISP UNS MATL	CU YD	862.000	X			=		
20400800	FURNISHED EXCAV	CU YD	12.000	X			=		
20700220	POROUS GRAN EMBANK	CU YD	3,015.000	X			=		
20800150	TRENCH BACKFILL	CU YD	135.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
21101615	TOPSOIL F & P 4	SQ YD	421.000	X			=		
21300010	EXPLOR TRENCH SPL	FOOT	25.000	X			=		
25000400	NITROGEN FERT NUTR	POUND	8.000	X			=		
25000500	PHOSPHORUS FERT NUTR	POUND	8.000	X			=		
25000600	POTASSIUM FERT NUTR	POUND	8.000	X			=		
25100630	EROSION CONTR BLANKET	SQ YD	1,438.000	X			=		
25200110	SODDING SALT TOLERANT	SQ YD	421.000	X			=		
28000250	TEMP EROS CONTR SEED	POUND	100.000	X			=		
28000400	PERIMETER EROS BAR	FOOT	840.000	X			=		
28000510	INLET FILTERS	EACH	26.000	X			=		
31100300	SUB GRAN MAT A 4	SQ YD	81.000	X			=		
31100700	SUB GRAN MAT A 8	SQ YD	1,320.000	X			=		
31101400	SUB GRAN MAT B 6	SQ YD	130.000	X			=		
31200100	STAB SUB-BASE 4	SQ YD	1,320.000	X			=		
35300300	PCC BSE CSE 8	SQ YD	149.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
40600100	BIT MATLS PR CT	GALLON	200.000	X			=		
42000400	PCC PVT 9	SQ YD	1,182.000	X			=		
42001300	PROTECTIVE COAT	SQ YD	275.000	X			=		
42001400	BR APPROACH PAVT SPL	SQ YD	342.000	X			=		
42400430	PC CONC SIDEWALK 5 SP	SQ FT	11,152.000	X			=		
42400800	DETECTABLE WARNINGS	SQ FT	40.000	X			=		
44000030	BIT SURF REM VAR DP	SQ YD	1,693.000	X			=		
44000100	PAVEMENT REM	SQ YD	1,613.000	X			=		
44000500	COMB CURB GUTTER REM	FOOT	679.000	X			=		
44000600	SIDEWALK REM	SQ FT	8,490.000	X			=		
48101600	AGGREGATE SHLDS B 8	SQ YD	20.000	X			=		
50102400	CONC REM	CU YD	140.000	X			=		
50102700	MASONRY REM	CU YD	55.000	X			=		
50200100	STRUCTURE EXCAVATION	CU YD	773.000	X			=		
50200400	ROCK EXC STRUCT	CU YD	310.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
50200510	COFFERDAMS SPL	EACH	3.000	X			=		
50300225	CONC STRUCT	CU YD	1,520.000	X			=		
50300254	RUBBED FINISH	SQ FT	967.000	X			=		
50300255	CONC SUP-STR	CU YD	179.000	X			=		
50300260	BR DECK GROOVING	SQ YD	1,264.000	X			=		
50300320	ELAST BEARING ASSY T2	EACH	28.000	X			=		
50800205	REINF BARS, EPOXY CTD	POUND	438,470.000	X			=		
51500100	NAME PLATES	EACH	1.000	X			=		
55019500	SS 1 RCP CL 4 12	FOOT	8.000	X			=		
55019700	SS 1 RCP CL 4 18	FOOT	8.000	X			=		
55021600	SS 2 RCP CL 3 12	FOOT	200.000	X			=		
55023700	SS 3 RCP CL 4 12	FOOT	40.000	X			=		
55026000	SS 4 RCP CL 5 18	FOOT	40.000	X			=		
55100300	STORM SEWER REM 8	FOOT	88.000	X			=		
55100400	STORM SEWER REM 10	FOOT	101.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
55100500	STORM SEWER REM 12	FOOT	29.000	X			=		
55100700	STORM SEWER REM 15	FOOT	54.000	X			=		
55100900	STORM SEWER REM 18	FOOT	81.000	X			=		
56103100	D I WATER MAIN 8	FOOT	135.000	X			=		
56103200	D I WATER MAIN 10	FOOT	472.000	X			=		
56104900	WATER VALVES 6	EACH	11.000	X			=		
56108900	TAP VALVE & SLEEVE 8	EACH	2.000	X			=		
56109000	TAP VALVE & SLEEVE 10	EACH	2.000	X			=		
56200600	WATER SERV LINE 1 3/4	FOOT	81.000	X			=		
56201300	CORP STOPS 3/4	EACH	2.000	X			=		
56400500	FIRE HYDNTS TO BE REM	EACH	2.000	X			=		
56400820	FIRE HYD W/AUX V & VB	EACH	2.000	X			=		
58700200	BRIDGE SEAT SEALER	SQ FT	1,041.000	X			=		
59100100	GEOCOMPOSITE WALL DR	SQ YD	403.000	X			=		
60101605	PIPE DRAINS 4 SPL	FOOT	90.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
60101705	PIPE DRAINS 6 SPL	FOOT	9.000	X			=		
60109582	P UNDR FOR STRUCT 6	FOOT	539.000	X			=		
60213300	CB SPEC	EACH	5.000	X			=		
60228200	MAN SAN SPL FR & CL	EACH	3.000	X			=		
60235800	INLETS TA T4F&G	EACH	1.000	X			=		
60240100	INLETS TA SPL SPL F&G	EACH	3.000	X			=		
60249110	VALVE VAULTS 4 DIA	EACH	6.000	X			=		
60249400	VALVE BOXES 6	EACH	11.000	X			=		
60255500	MAN ADJUST	EACH	1.000	X			=		
60260100	INLETS ADJUST	EACH	3.000	X			=		
60265700	VV ADJUST	EACH	3.000	X			=		
60500040	REMOV MANHOLES	EACH	4.000	X			=		
60500060	REMOV INLETS	EACH	6.000	X			=		
60600105	CONC CURB	FOOT	390.000	X			=		
60603800	COMB CC&G TB6.12	FOOT	64.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
67000400	ENGR FIELD OFFICE A	CAL MO	22.000	X			=		
67000600	ENGR FIELD LAB	CAL MO	22.000	X			=		
67100100	MOBILIZATION	L SUM	1.000	X			=		
70101700	TRAF CONT & PROT	L SUM	1.000	X			=		
70101900	TRAF CONT & PROT D1	L SUM	1.000	X			=		
70103816	TR CONT SURVEILLANCE	CAL MO	22.000	X			=		
70300210	TEMP PVT MK LTR & SYM	SQ FT	437.000	X			=		
70300220	TEMP PVT MK LINE 4	FOOT	9,292.000	X			=		
70300240	TEMP PVT MK LINE 6	FOOT	981.000	X			=		
70300260	TEMP PVT MK LINE 12	FOOT	333.000	X			=		
70300280	TEMP PVT MK LINE 24	FOOT	225.000	X			=		
70301000	WORK ZONE PAVT MK REM	SQ FT	4,807.000	X			=		
70400100	TEMP CONC BARRIER	FOOT	710.000	X			=		
70400200	REL TEMP CONC BARRIER	FOOT	355.000	X			=		
72000100	SIGN PANEL T1	SQ FT	97.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
72400900	REMOV SIGN PANEL	EACH	21.000	X			=		
73700100	REM GR-MT SIN SUPPORT	EACH	6.000	X			=		
73700200	REM CONC FDN-GR MT	EACH	6.000	X			=		
78000100	THPL PVT MK LTR & SYM	SQ FT	292.000	X			=		
78000200	THPL PVT MK LINE 4	FOOT	1,977.000	X			=		
78000400	THPL PVT MK LINE 6	FOOT	1,234.000	X			=		
78000600	THPL PVT MK LINE 12	FOOT	322.000	X			=		
78000650	THPL PVT MK LINE 24	FOOT	233.000	X			=		
78005100	EPOXY PVT MK LTR-SYM	SQ FT	146.000	X			=		
78005110	EPOXY PVT MK LINE 4	FOOT	1,378.000	X			=		
78005130	EPOXY PVT MK LINE 6	FOOT	575.000	X			=		
78005150	EPOXY PVT MK LINE 12	FOOT	59.000	X			=		
78200530	BAR WALL MKR TYPE C	EACH	28.000	X			=		
78300100	PAVT MARKING REMOVAL	SQ FT	1,868.000	X			=		
80700110	GROUND ROD 3/4 X 10	EACH	16.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
80800425	TEMP WP50 CL4 15MA	EACH	2.000	X			=		
81000600	CON T 2 GALVS	FOOT	325.000	X			=		
81012300	CON T 1 PVC	FOOT	725.000	X			=		
81012500	CON T 1 1/2 PVC	FOOT	780.000	X			=		
81016100	CON T 1/2 HDP COIL	FOOT	140.000	X			=		
81018500	CON P 2 GALVS	FOOT	60.000	X			=		
81100200	CON AT ST 3/4 GALVS	FOOT	200.000	X			=		
81200120	CON EMB STR 2 GALVS	FOOT	240.000	X			=		
81200200	CON EMB STR 3/4 PVC	FOOT	375.000	X			=		
81200210	CON EMB STR 1 PVC	FOOT	590.000	X			=		
81200220	CON EMB STR 1.5 PVC	FOOT	480.000	X			=		
81300320	JUN BX SS AS 8X8X6	EACH	4.000	X			=		
81300980	JUN BX SS ES 8X8X6	EACH	4.000	X			=		
81303950	JUN BOX EM S 6X6X6	EACH	4.000	X			=		
81400400	CONC HANDHOLE	EACH	3.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
81500200	TR & BKFIL F ELECT WK	FOOT	1,365.000	X			=		
81700120	EC C EPR RHW 1C 6	FOOT	700.000	X			=		
81700315	EC C EPR RHW 3-1C 10	FOOT	330.000	X			=		
81700325	EC C EPR RHW 3-1C 8	FOOT	400.000	X			=		
81700355	EC C EPR RHW 3-1C 2	FOOT	1,200.000	X			=		
81701125	EC C EPR USE 1C 1/0	FOOT	800.000	X			=		
81701145	EC C EPR USE 1C 3/0	FOOT	600.000	X			=		
81800320	A CBL 3-1C4 MESS WIRE	FOOT	540.000	X			=		
82103250	LUM SV HOR MT PC 250W	EACH	10.000	X			=		
82103400	LUM SV HOR MT PC 400W	EACH	2.000	X			=		
83006300	LT P A 30MH 8MA	EACH	10.000	X			=		
83600200	LIGHT POLE FDN 24D	FOOT	70.000	X			=		
84100110	REM TEMP LIGHT UNITS	EACH	2.000	X			=		
84200500	REM EX LT UNIT SALV	EACH	22.000	X			=		
85000200	MAIN EX TR SIG INSTAL	EACH	2.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
89000100	TEMP TR SIG INSTALL	EACH	2.000	X			=		
89502350	REM & RE ELCBL FR CON	FOOT	1,296.000	X			=		
				TOTAL	$				

NOTE:

1. EACH PAY ITEM SHOULD HAVE A UNIT PRICE AND A TOTAL PRICE.

2. THE UNIT PRICE SHALL GOVERN IF NO TOTAL PRICE IS SHOWN OR IF THERE IS A DISCREPANCY BETWEEN THE PRODUCT OF THE UNIT PRICE MULTIPLIED BY THE QUANTITY.

3. IF A UNIT PRICE IS OMITTED, THE TOTAL PRICE WILL BE DIVIDED BY THE QUANTITY IN ORDER TO ESTABLISH A UNIT PRICE.

4. A BID MAY BE DECLARED UNACCEPTABLE IF NEITHER A UNIT PRICE NOR A TOTAL PRICE IS SHOWN.

RETURN WITH BID

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

I. GENERAL

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

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

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

II. ASSURANCES

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

B. Felons

1. The Illinois Procurement Code provides:

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

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

C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

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

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

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

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

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

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

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.

(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

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

TO BE RETURNED WITH BID

IV. DISCLOSURES

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

B. Financial Interests and Conflicts of Interest

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

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

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

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

C. Disclosure Form Instructions

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

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

CERTIFICATION STATEMENT

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

_____
(Bidding Company)

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

_____ _____
Signature of Authorized Representative Date

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

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

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than $90,420.00? YES ___ NO___
3. Does anyone in your organization receive more than $90,420.00 of the bidding entity's or parent entity's distributive income? (Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.) YES ___ NO __
4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than $90,420.00? YES ___ NO __

   (Note: Only one set of forms needs to be completed per person per bid even if a specific individual would require a yes answer to more than one question.)

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

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

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

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

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

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

D. Bidders Submitting More Than One Bid

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

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

_____

_____

RETURN WITH BID/OFFER

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A
Financial Information & Potential Conflicts of Interest Disclosure

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

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

DISCLOSURE OF FINANCIAL INFORMATION

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

FOR INDIVIDUAL (type or print information)

NAME: _____

ADDRESS _____

_____

Type of ownership/distributable income share:

stock _____ sole proprietorship _____ Partnership _____ other: (explain on separate sheet):

% or $ value of ownership/distributable income share: _____

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

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

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

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

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

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

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

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

Yes ___No __

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

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois Toll Highway Authority? Yes ___No __

2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name of the spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____
_____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $90,420.00, (60% of the salary of the Governor as of 7/1/01) are you entitled to receive (i) more than 71/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ___ No __

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

Yes ___ No __

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

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

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

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

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

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(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: _____ _____
Signature of Individual or Authorized Representative — Date

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

Illinois Department of Transportation

Contract No. 83869
KANE County
Section 00-00059-00-BR (Batavia)
Project ACBRM-ACTE-HD-7003(949)
Route FAU 1441 (Wilson Street)
District 1 Construction Funds

PART I. IDENTIFICATION

Dept. Human Rights # _____ Duration of Project: _____

Name of Bidder: _____

PART II. WORKFORCE PROJECTION

A. The undersigned bidder has analyzed minority group and female populations, unemployment rates and availability of workers for the location in which this contract work is to be performed, and for the locations from which the bidder recruits employees, and hereby submits the following workforce projection including a projection for minority and female employee utilization in all job categories in the workforce to be allocated to this contract:

TABLE A

TOTAL Workforce Projection for Contract													TABLE B: CURRENT EMPLOYEES TO BE ASSIGNED TO CONTRACT			
			MINORITY EMPLOYEES						TRAINEES							
JOB CATEGORIES	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.		APPREN-TICES		ON THE JOB TRAINEES		TOTAL EMPLOYEES		MINORITY EMPLOYEES	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
OFFICIALS (MANAGERS)																
SUPERVISORS																
FOREMEN																
CLERICAL																
EQUIPMENT OPERATORS																
MECHANICS																
TRUCK DRIVERS																
IRONWORKERS																
CARPENTERS																
CEMENT MASONS																
ELECTRICIANS																
PIPEFITTERS, PLUMBERS																
PAINTERS																
LABORERS, SEMI-SKILLED																
LABORERS, UNSKILLED																
TOTAL																

TABLE C

TOTAL Training Projection for Contract								
EMPLOYEES IN TRAINING	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.	
	M	F	M	F	M	F	M	F
APPRENTICES								
ON THE JOB TRAINEES								

FOR DEPARTMENT USE ONLY

*Other minorities are defined as Asians (A) or Native Americans (N).

Please specify race of each employee shown in Other Minorities column.

Note: See instructions on the next page

RETURN WITH BID

Contract No. 83869
KANE County
Section 00-00059-00-BR (Batavia)
Project ACBRM-ACTE-HD-7003(949)
Route FAU 1441 (Wilson Street)
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. 83869
KANE County
Section 00-00059-00-BR (Batavia)
Project ACBRM-ACTE-HD-7003(949)
Route FAU 1441 (Wilson Street)
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.

Firm Name _____

(IF AN INDIVIDUAL) Signature of Owner _____

Business Address _____

_____

Firm Name _____

By _____

(IF A CO-PARTNERSHIP) Business Address _____

_____
Name and Address of All Members of the Firm:

_____ _____

Corporate Name _____

By _____
Signature of Authorized Representative

(IF A CORPORATION)

_____
Typed or printed name and title of Authorized Representative

Attest _____
Signature

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

Corporate Name _____

By _____
Signature of Authorized Representative

(IF A JOINT VENTURE)

_____
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

Illinois Department of Transportation

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 _____

_____ as SURETY, are 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)	_____ (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

Illinois Department of Transportation

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. 83869
KANE County
Section 00-00059-00-BR (Batavia)
Project ACBRM-ACTE-HD-7003(949)
Route FAU 1441 (Wilson Street)
District 1 Construction Funds

Illinois Department of Transportation

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., November 17, 2006. 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. 83869
   KANE County
   Section 00-00059-00-BR (Batavia)
   Project ACBRM-ACTE-HD-7003(949)
   Route FAU 1441 (Wilson Street)
   District 1 Construction Funds

Remove existing three span, reinforced concrete filled spandrel arch bridge and construct a three span variable depth continuous cast-in-place post-tensioned slab structure, remove existing abutments and replace with concrete full height abutments supported by micropiles, retaining walls, storm sewer, water main, curb and gutter, concrete pavement reconstruction, pedestrian walk paths, lighting, sidewalks and architectural enhancements over the Fox River in Batavia.

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

   (b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS**. This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Timothy W. Martin, Secretary

BD 351 (Rev. 01/2003)

Contract
83869

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

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

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

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

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

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

TABLE OF CONTENTS

BDE SPECIAL PROVISIONS
For The November 17, 2006 Letting

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

	File Name	PG #		Special Provision Title	Effective	Revised
	80099			Accessible Pedestrian Signals (APS)	April 1, 2003	
	80156	229	X	Aggregate Shipping Tickets	Jan. 1, 2006	
	80108			Asbestos Bearing Pad Removal	Nov. 1, 2003	
	7254I			Asbestos Waterproofing Membrane and Asbestos Bituminous Concrete Surface Removal	June 1, 1989	June 30,1994
	80128			Authority of Railroad Engineer	July 1, 2004	
	80065	230	X	Bituminous Base Course/Widening Superpave	April 1, 2002	Aug. 1, 2005
	80050	236	X	Bituminous Concrete Surface Course	April 1, 2001	April 1, 2003
	80142	237	X	Bituminous Equipment, Spreading and Finishing Machine	Jan. 1, 2005	
	80066			Bridge Deck Construction	April 1, 2002	April 1, 2004
	5026I			Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	Aug. 1, 2001
	5048I			Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	Aug. 1, 2001
	5049I			Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	Aug. 1, 2001
	5053I			Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	Aug. 1, 2001
	80118			Butt Joints	April 1, 2004	April 1, 2005
	80031			Calcium Chloride Accelerator for Portland Cement Concrete Patching	Jan. 1, 2001	
	80077			Chair Supports	Nov. 1, 2002	Nov. 2, 2002
	80051	238	X	Coarse Aggregate for Trench Backfill, Backfill and Bedding	April 1, 2001	Nov. 1, 2003
	80094	245	X	Concrete Admixtures	Jan. 1, 2003	July 1, 2004
	80112			Concrete Barrier	Jan. 1, 2004	April 2, 2004
	80102			Corrugated Metal Pipe Culverts	Aug. 1, 2003	July 1, 2004
	80114	250	X	Curing and Protection of Concrete Construction	Jan. 1, 2004	Nov. 1, 2005
	80146	258	X	Detectable Warnings	Aug. 1, 2005	
	80029	260	X	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	June 22, 2005
	80144	268	X	Elastomeric Bearings	April 1, 2005	
	31578			Epoxy Coating on Reinforcement	April 1, 1997	Jan. 1, 2003
	80041	273	X	Epoxy Pavement Marking	Jan. 1, 2001	Aug. 1, 2003
	80055	275	X	Erosion and Sediment Control Deficiency Deduction	Aug. 1, 2001	Nov. 1, 2001
	80103	276	X	Expansion Joints	Aug. 1, 2003	
	80101	277	X	Flagger Vests	April 1, 2003	Jan. 1, 2006
	80079	278	X	Freeze-Thaw Rating	Nov. 1, 2002	
	80072	279	X	Furnished Excavation	Aug. 1, 2002	Nov. 1, 2004
	80054	280	X	Hand Vibrator	Nov. 1, 2003	
	80147			Illuminated Sign	Aug. 1, 2005	
	80109			Impact Attenuators	Nov. 1, 2003	Aug. 1, 2006
	80110	281	X	Impact Attenuators, Temporary	Nov. 1, 2003	Aug. 1, 2006
	80104	283	X	Inlet Filters	Aug. 1, 2003	
	80080			Insertion Lining of Pipe Culverts	Nov. 1, 2002	Aug. 1, 2003
	80150			Light Emitting Diode (LED) Pedestrian Signal Head	Nov. 1, 2005	April 1, 2006
	80067			Light Emitting Diode (LED) Signal Head	April 1, 2002	Nov. 1, 2005
	80081			Lime Gradation Requirements	Nov. 1, 2002	
	80133			Lime Stabilized Soil Mixture	Nov. 1, 2004	April 1, 2006
	80158			Manholes	April 1, 2006	
*	80045			Material Transfer Device	June 15, 1999	March 1, 2001
	80137			Minimum Lane Width with Lane Closure	Jan. 1, 2005	
*	80165			Moisture Cured Urethane Paint System	Nov. 1, 2006	
	80138			Mulching Seeded Areas	Jan. 1, 2005	
	80082			Multilane Pavement Patching	Nov. 1, 2002	
	80129			Notched Wedge Longitudinal Joint	July 1, 2004	
	80069	285	X	Organic Zinc-Rich Paint System	Nov. 1, 2001	Aug. 1, 2003

	File Name	PG #		Special Provision Title	Effective	Revised
	80116	289	X	Partial Payments	Sept. 1, 2003	
	80013			Pavement and Shoulder Resurfacing	Feb. 1, 2000	July 1, 2004
	53600			Pavement Thickness Determination for Payment	April 1, 1999	Jan. 1, 2004
	80022	290	X	Payments to Subcontractors	June 1, 2000	Jan. 1, 2006
	80155	292	X	Payrolls and Payroll Records	Aug. 10, 2005	
	80130	294	X	Personal Protective Equipment	July 1, 2004	
	80148	295	X	Planting Woody Plants	Jan. 1, 2006	
	80134			Plastic Blockouts for Guardrail	Nov. 1, 2004	
	80073			Polymer Modified Emulsified Asphalt	Nov. 1, 2002	
	80119			Polyurea Pavement Marking	April 1, 2004	
	80124	296	X	Portable Changeable Message Signs	Nov. 1, 1993	April 2, 2004
	80139	297	X	Portland Cement	Jan. 1, 2005	Nov. 1, 2005
	80083	298	X	Portland Cement Concrete	Nov. 1, 2002	
	80036			Portland Cement Concrete Patching	Jan. 1, 2001	Jan. 1, 2004
	419	299	X	Precast Concrete Products	July 1, 1999	Nov. 1, 2004
	80120			Precast, Prestressed Concrete Members	April 1, 2004	
	80084	300	X	Preformed Recycled Rubber Joint Filler	Nov. 1, 2002	
	80015			Public Convenience and Safety	Jan. 1, 2000	
	80121			PVC Pipeliner	April 1, 2004	April 1, 2005
	80159			Railroad Flaggers	April 1, 2006	
	80122			Railroad, Full-Actuated Controller and Cabinet	April 1, 2004	
	3426I			Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
	80157			Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
	80105			Raised Reflective Pavement Markers (Bridge)	Aug. 1, 2003	
	80011			RAP for Use in Bituminous Concrete Mixtures	Jan. 1, 2000	April 1, 2002
	80160			Reflective Crack Control Treatment	April 1, 2006	Aug. 1, 2006
	80151	301	X	Reinforcement Bars	Nov. 1, 2005	Nov. 2, 2005
	80164			Removal and Disposal of Regulated Substances	Aug. 1, 2006	
	80032			Remove and Re-Erect Steel Plate Beam Guardrail and Traffic Barrier Terminals	Jan. 1, 2001	Jan. 1, 2005
	80085			Sealing Abandoned Water Wells	Nov. 1, 2002	
*	80131	303	X	Seeding and Sodding	July 1, 2004	Nov. 1, 2006
	80152	306	X	Self-Consolidating Concrete for Cast-In-Place Construction	Nov. 1, 2005	
	80132	312	X	Self-Consolidating Concrete for Precast Products	July 1, 2004	Nov. 1, 2005
	80096			Shoulder Rumble Strips	Jan. 1, 2003	
	80140			Shoulder Stabilization at Guardrail	Jan. 1, 2005	
	80135			Soil Modification	Nov. 1, 2004	April 1, 2006
	80070			Stabilized Subbase and Bituminous Shoulders Superpave	April 1, 2002	Aug. 1, 2005
	80127	314	X	Steel Cost Adjustment	April 2, 2004	July 1, 2004
	80153			Steel Plate Beam Guardrail	Nov. 1, 2005	Aug. 1, 2006
	80143	318	X	Subcontractor Mobilization Payments	April 2, 2005	
	80086	319	X	Subgrade Preparation	Nov. 1, 2002	
	80136			Superpave Bituminous Concrete Mixture IL-4.75	Nov. 1, 2004	
	80010	320	X	Superpave Bituminous Concrete Mixtures	Jan. 1, 2000	April 1, 2004
	80039			Superpave Bituminous Concrete Mixtures (Low ESAL)	Jan. 1, 2001	April 1, 2004
	80075			Surface Testing of Pavements	April 1, 2002	Nov. 1, 2005
	80145			Suspension of Slipformed Parapets	June 11, 2004	
	80092	327	X	Temporary Concrete Barrier	Oct. 1, 2002	Nov. 1, 2003
	80087	330	X	Temporary Erosion Control	Nov. 1, 2002	
	80008			Temporary Module Glare Screen System	Jan. 1, 2000	
	80106			Temporary Portable Bridge Traffic Signals	Aug. 1, 2003	
	80098			Traffic Barrier Terminals	Jan. 1, 2003	
	5729I	332	X	Traffic Control Deficiency Deduction	April 1, 1992	Jan. 1, 2005
	80161	333	X	Traffic Signal Grounding	April 1, 2006	
	20338	334	X	Training Special Provisions	Oct. 15, 1975	

File Name	PG #		Special Provision Title	Effective	Revised
80107			Transient Voltage Surge Suppression	Aug. 1, 2003	
80123	337	X	Truck Bed Release Agent	April 1, 2004	
80154			Turf Reinforcement Mat	Nov. 1, 2005	
80162			Uninterruptable Power Supply (UPS)	April 1, 2006	
80149	338	X	Variable Spaced Tining	Aug. 1, 2005	
80163	339	X	Water Blaster with Vacuum Recovery	April 1, 2006	
80048	340	X	Weight Control Deficiency Deduction	April 1, 2001	Aug. 1, 2002
80090			Work Zone Public Information Signs	Sept. 1, 2002	Jan. 1, 2005
80125			Work Zone Speed Limit Signs	April 2, 2004	Jan. 1, 2006
80126			Work Zone Traffic Control	April 2, 2004	Nov. 1, 2005
80097	342	X	Work Zone Traffic Control Devices	Jan. 1, 2003	Nov. 1, 2004
80071	344	X	Working Days	Jan. 1, 2002	

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

80141 Additional Award Criteria This special provision is no longer required.

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

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, 2002, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", 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 Donovan Bridge over the Fox River, FAU Route 1441 (Wilson Street), Section 00-00059-00-BR, Project BRM 7003-949, in Batavia, Kane County, and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

This project begins at Station 8+10.25, approximately 190 feet west of the centerline of Shumway Avenue, and extends east over the Fox River to Station 16+35.67, approximately 36 feet east of the centerline of North River Street, all within the City of Batavia. The total length of the improvement in the east-west direction is 825.42 feet.

DESCRIPTION OF PROJECT

This project involves the removal of the existing three span, reinforced concrete filled spandrel arch bridge (Structure Number 045-6050), and the construction of a three span, variable depth continuous cast-in-place post-tensioned slab (Structure Number 045-6051). The existing abutments will be removed and new concrete full height abutments supported by micropiles socketed into bedrock will be reconstructed behind the location of the existing abutments to accommodate the extension of the mixed-use path on the west side of the river and the construction of a walkway on the east side of the river. New stairs will be constructed at all four corners of the proposed structure to provide access to the mixed-use paths along the river. Replacement concrete retaining walls will be constructed along the river in the vicinity of the bridge to match the new abutments and to allow for construction of the pedestrian paths on both riverbanks. The existing piers will be removed to below the weathered rock below the riverbed. Two cast –in-place concrete wall piers will be constructed on spread footings socketed into existing bedrock. Pedestrian overlooks will be located above both piers. Approach slabs will be constructed on both sides of the bridge with concrete pavement reconstruction of Wilson Street between Shumway Avenue and River Street.

Work performed under this contract includes the following major items: superstructure removal and replacement, substructure removal and replacement, approach slab removal and replacement, storm sewer, sanitary sewer, water main, combination concrete curb and gutter, concrete pavement reconstruction, bituminous concrete intersection resurfacing, sidewalks, pedestrian river walk paths, lighting, pavement markings, landscaping, architectural

enhancements, and all incidental and collateral work necessary to complete the project as shown on the plans and as described herein.

STATUS OF UTILITIES TO BE ADJUSTED

The plans represent the best information available to the Department. The applicable portions of Articles 105.07 and 107.31 of the Standard Specifications shall apply.

Utility companies involved in this project are listed below:

City of Batavia
Department of Public Works
Electric Department
200 North Raddant Road
Batavia, IL 60510
(630) 879-1424

City of Batavia
Department of Public Works
Water Department
200 North Raddant Road
Batavia, IL 60510
(630) 879-1424

NICOR Gas
1844 Ferry Road
Naperville, IL 60593-9600
(630) 983-8676

ComEd
Regional Engineering Northeast Glenbard
1N423 Swift Road
Lombard, IL 60148
(630) 424-5700

SBC
225 East Chicago Street
Elgin, IL 60120
(847) 888-6869

Comcast Cable
1304 Marquette Drive
Romeoville, IL 60446
(630) 351-5035

START OF WORK

The Contractor will not be allowed to proceed with any construction operations prior to February 15, 2007. The Contractor shall complete all construction work necessary to safely open Wilson Street to pedestrians and traffic within 340 working days.

WORKING HOURS

The Contractor shall limit construction activities to the hours between 7 a.m. and 7 p.m. Monday through Friday unless authorized in writing by the Engineer.

INCENTIVE/DISINCENTIVE

Working Days: The Contractor's operations shall be scheduled so as to complete all work necessary to open the roadway to traffic within 340 working days.

A working day shall be defined as any calendar day between March 1 and November 30 inclusive except Saturdays, Sundays, or legal holidays observed by the Contractor's entire work force in Illinois. The length of a working day will be determined by the Engineer in accordance with Article 108.04 of the Standard Specifications.

The Engineer will determine which days are workable in accordance with the provisions of Article 108.04 of the Standard Specifications.

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

Failure to Complete the Work on Time: Should the Contractor fail to complete the work within the specified number of working days or within such extended time as allowed by the City, the Contractor shall be liable to the City in the amount of $7200 not as a penalty but as liquidated and ascertained damages for each additional working day beyond the 340 working days or extended time as may be allowed. Such damages may be deducted by the City from any monies due the Contractor.

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

Complete Closures to Traffic: The Contractor will be allowed the following times for complete closure of the bridge and roadway to facilitate construction operations subject to the approval of the Engineer:

2 – 2 week closures: starting at 9 pm Friday and ending at 5 am the third Monday following the shutdown date.

6 – weekend closures: starting 9 pm Friday and ending at 5am the next Monday

Nighttime closures: from 9 pm in the evening to 5 am the following morning

Failure to Open Road to Traffic: Should the Contractor fail to open the roadway to traffic by 5 am, the Contractor shall be liable to the City in the amount of $7200 not as a penalty but as liquidated and ascertained damages for each calendar day or portion of a calendar day that the roadway remains closed to traffic. Such damages may be deducted by the City from any monies due the Contractor.

Incentive Payment Plan: No incentive payments will be made for completing the work in fewer than the specified working days.

EXCLUSIONARY PERIOD

In accordance with the permit granted by the Illinois Department of Natural Resources for this project, no construction activities or other Contractor operations may take place in the Fox River

during the exclusionary period between April 1 and June 15. This includes demolition over open water.

The Contractor will be permitted to work within a cofferdam provided that the cofferdam is constructed and removed outside of the exclusionary period.

The Contractor shall schedule all construction activities to meet the requirements of the exclusionary period and complete the project within the scheduled working days.

INSURANCE

The Contractor shall obtain and thereafter keep in force the insurance coverages as specified in Article 107.27 of the Standard Specifications.

All costs for insurance as specified will be considered as included in the cost of the contract.

POST OFFICE MAIL BOX REMOVAL

General: The Contractor shall contact the Batavia Postmaster at least 3 week days in advance to coordinate removal of the mail box:

Batavia Post Office
500 N Randall Rd
Batavia, 60510
(630) 879-1483

The Contractor shall arrange to remove and deliver the mail box to the location designated by the Postmaster.

The Contractor shall protect the mail box from damage during construction activities prior to removal, during the removal operation, during transport to the designated location and while placing into storage at the designated location. Any damage to the mail box due to the Contractor's operations shall be repaired at the Contractor's expense to the satisfaction of the Postmaster.

Measurement for Payment: This item will not be measured for payment

Basis of Payment: Post office mail box removal will not be paid separately but will be considered as included in the cost of the sidewalk removal item.

MAINTENANCE OF ROADWAYS

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 shown on the plans and 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.

TRAFFIC CONTROL PLAN

Traffic control shall be in accordance with the applicable sections of the "Standard Specifications for Road and Bridge Construction", the applicable guidelines contained in the "Manual on Uniform Traffic Control Devices for Streets and Highways", Illinois Supplement to the National Manual of Uniform Traffic Control Devices, these Special Provisions, and any special details and Highway Standards contained herein and in the plans.

Special attention is called to Article 107.09 and 107.14 of the "Standard Specifications for Road and Bridge Construction" and the following Highway Standards relating to traffic control:

701006-02 702001-06 704001-02

In addition, the following Special Provision(s) will also govern traffic control for this project:

MAINTENANCE OF ROADWAYS
TRAFFIC CONTROL AND PROTECTION (DETOUR 1)
WORK ZONE TRAFFIC CONTROL (LUMP SUM PAYMENT)
FLAGGER VESTS
IMPACT ATTENUATORS, TEMPORARY
IMPACT ATTENUATORS, RELOCATE
PERSONAL PROTECTIVE EQUIPMENT
PORTABLE CHANGEABLE MESSAGE SIGN
TEMPORARY CONCRETE BARRIER
TRAFFIC CONTROL DEFICIENCY DEDUCTION
WORK ZONE TRAFFIC CONTROL DEVICES

TRAFFIC CONTROL AND PROTECTION (DETOUR 1)

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

Furnishing, erecting, maintaining and removing traffic control devices along detour routes, in accordance with the details shown on the plans, will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (DETOUR 1).

WORK ZONE TRAFFIC CONTROL (LUMP SUM PAYMENT)

Specific traffic control plans and Special Provisions have been prepared for this contract.

Method of Measurement: All traffic control (except detour route traffic control, traffic control pavement marking, temporary concrete barriers, temporary impact attenuators, and temporary traffic signals) indicated on the traffic control plans and specified in the Special Provisions will be measured for payment on a lump sum basis. Traffic control pavement markings will be measured per foot for lines and per square foot for symbols.

Pedestrian Sidewalk Control: This work will consist of installing, maintaining, and removing necessary signs and barricades needed to direct pedestrian to usable sidewalks and walkways during the construction. Illinois Standard sign R11-1102 (Sign legend, "Sidewalk Closed" : Size 24" x 30"; black legend on a white reflectorized background) will be placed at pedestrian crossing locations informing pedestrians of closed sidewalk sections. Barricades will be placed on all closed sidewalk sections.

NOTES:

Barricades must be Type I or II.
Use one "Sidewalk Closed" sign at each end of each sidewalk section being reconstructed.
At each point of closure, sufficient numbers of barricades will be used to completely close the pathway.
Pedestrian walkways will be maintained free of any obstructions and hazards such as holes, debris, mud, construction equipment, stored materials, etc.
All hazards near or adjacent to walkways will be clearly delineated.
In areas outside of the bridge, the work will be staged so that both sidewalks are not out of service at the same time.
Pedestrian access to all buildings will be maintained at all times

The cost of this work will be included in the contract lump sum price for Traffic Control and Protection.

Basis of Payment: All traffic control and protection will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION. This price shall be payment in full for all labor, materials, transportation, handling and incidental work necessary to furnish, install, maintain and remove all traffic control devices required as indicated on the plans and as approved by the Engineer.

TRAFFIC CONTROL AND PROTECTION (DETOUR 1), TEMPORARY PAVEMENT MARKING, WORK ZONE PAVEMENT MARKING REMOVAL, TRAFFIC CONTROL SURVEILLANCE, TEMPORARY CONCRETE BARRIER, RELOCATE TEMPORARY CONCRETE BARRIER, IMPACT ATTENUATORS, TEMPORARY, IMPACT ATTENUATORS,

RELOCATE, MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION, and TEMPORARY TRAFFIC SIGNAL INSTALLATION will be paid for separately.

TEMPORARY INFORMATION SIGNING

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

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

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

Note 1.The Contractor may use 5/8 inch instead of 3/4 inch thick plywood.
Note 2. Type A sheeting can be used on the plywood base.
Note 3. All sign faces shall be Type, A except all orange signs shall meet the requirements of Article 1084.02(b).
Note 4. The overlay panels shall be 0.08 inch thick.

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

Signs which are placed along the expressway shoulder and/or within the construction zone shall be installed according to the requirements of Article 702.05 and Article 720.04. The signs shall be seven feet above the near edge of the pavement and shall be a minimum of two feet beyond the edge of the paved shoulder. A minimum of two posts shall be used.

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

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

Method Of Measurement: This work shall be measured for payment in square feet edge to edge (horizontally and vertically).

Basis of Payment: This work shall be paid for at the contract unit price per square foot for TEMPORARY INFORMATION SIGNING, which price shall be full compensation for all labor, equipment and materials required for performing the work as herein specified.

TEMPORARY BITUMINOUS PAVEMENT

Description: This work shall include the placement and removal of temporary bituminous pavement at locations as shown on the plans and as directed by the Engineer. This work shall be in accordance with the applicable portions of Sections 406 of the Standard Specifications and BDE Special Provisions 80065 Bituminous Base Course/Widening Superpave and BDE Special Provisions 80010 Superpave Bituminous Concrete Mixtures.
General: The temporary pavement shall consist of eight (8) inches of Bituminous Base Course Superpave. The bituminous material shall be performance graded (PG) asphalt cement (AC), PG58-22 with a maximum RAP percentage of 50 percent, and 2.0 percent air voids at 50 Gyrations. The temporary pavement shall be placed on compacted soil as approved by the Engineer.

This item shall include any excavation or embankment required to bring the temporary pavement and side slopes to grade.

Excavation or embankment required due to this item will not be paid for separately but shall be included in the cost of this item.

Method of Measurement: This work will be measured for payment in place and the area computed in square yards.

Basis of Payment: This work will be paid for at the contract unit price per square yard for TEMPORARY BITUMINOUS PAVEMENT, which price shall be payment in full for all equipment, labor, and material including furnishing, transporting, placing, compacting, maintaining temporary bituminous concrete pavement, excavation, embankment, and removal.

TEMPORARY CHAIN LINK FENCE, 8'

Description: This item shall consist of constructing a chain link fence 8 feet high and any necessary gates as shown on the plans or as directed ordered by the Engineer. This work shall be in accordance with Section 664 of the Standard Specifications, except as modified herein.

General: No additional compensation shall be provided for mounting posts into existing sidewalk, pavement, curb and gutter or any other surface encountered. Upon completion of the project or as directed by the Engineer, the fence, gates, posts and all other fence hardware shall be removed from the job site and become the property of the Contractor. The salvage value of the fence shall be reflected in the bid price. All postholes shall be filled and compacted with a material similar to the surrounding material and as directed by the Engineer.

Any work necessary to remove, relocate and reinstall the fencing as shown on the plans and as directed by the Engineer for the purpose of staged construction shall be included in the cost of this item.

Method of Measurement: The installation of temporary chain link fence shall be measured for payment in place per foot. The length paid will be the overall length, parallel to the ground slope, from center to center of end posts.

Basis of Pavrnent: This work shall be paid for at the contract unit price per foot for TEMPORARY CHAIN LINK FENCE, 8', which price shall be considered payment in full for completing this work as specified including installing and removing chain link fence and gates, and all excavation, backfilling, labor, tools, and equipment necessary complete this item.

TRENCH BACKFILL

Revise Article 208.02 of the Standard Specifications to read:

"208.02 Materials. Materials shall be according to the following Articles of Section 1000 – Materials:
(a) Coarse Aggregate (Note 1) 1004.06

Note 1. The coarse aggregate gradation shall be CA-6 crushed limestone or CA-7 crushed stone as shown on the plans. The coarse aggregate shall be wet to the satisfaction of the Engineer.

BACKFILLING SEWERS AND CONDUITS UNDER ROADWAYS AND SIDEWALKS

For storm sewers, sanitary sewers, water mains, electrical conduits and all other underground service lines located underneath existing or proposed pavement areas, backfilling methods two and three authorized under the provisions of Article 550.07 of the Standard Specifications will not be allowed.

STABILIZED CONSTRUCTION ENTRANCE

Description: This work shall consist of constructing stabilized construction entrances in accordance with Sections 282 and 351 of the Standard Specifications and Code 930 of the Illinois Urban Manual, Practice and as shown on the plans.

General: The stabilized construction entrance shall be constructed according to the Illinois Urban Manual, Standard Drawing IL-630 as shown on the plans. The Contractor has the option to install a wash rack. It is the Contractor's responsibility to maintain the roadway in a clean condition.

The locations of the stabilized construction entrances must be approved by the Engineer.

Method of Measurement: This work will be measured for payment in place and the area computed in square yards.

Basis of Payment: This work will be paid for at the contract unit price per square yard for STABILIZED CONSTRUCTION ENTRANCE. This price shall include excavation, aggregate, filter fabric, wash rack (If needed), and all material, equipment, and labor necessary for complete installation and removal when the entrance is not needed.

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH, SPECIAL

Work under this item will be in accordance with Section 424 of the Standard Specifications, except as herein modified.

Add the following sentence to the end of Article 424.01 of the Standard Specifications:

"The sidewalk shall be used as a base for concrete pavers at the locations shown on the plans."

Add the following sentence to the end of the first paragraph of Article 424.06 of the Standard Specifications:

"The brush finish will not be required for sidewalk used as a base for concrete pavers at the locations shown on the plans."

Revise the first sentence of the second paragraph of Article 424.06 of the Standard Specifications to read:

"The sidewalk grooves will be constructed at the locations shown on the plans."

Add the following two paragraphs after the second paragraph of Article 424.06 of the Standard Specifications:

"2 inch diameter weep holes shall be cored into or cast into the sidewalk and filled with granular backfill meeting the applicable requirements of Section 209 at the locations shown on the plans.

An additional sidewalk edge height shall be constructed adjacent to the tree grates as shown on the plans."

Replace Articles 424.08 – 424.12 of the Standard Specifications with the following:

"424.08 Sidewalk Ramps. A variable height sidewalk ramp shall be constructed in front of the businesses located at 9-13 East Wilson Street as shown on the plans.

424.14 Basis of Payment. This work will be paid for at the contract unit price per square foot for PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH, SPECIAL, which price shall include all required expansion joints, special texturing, grooving, weep hole construction,

variable height sidewalk at the sidewalk ramps, and variable height edges adjacent to tree grates.

REINFORCED PORTLAND CEMENT CONCRETE SIDEWALK, VARIABLE DEPTH

Work under this item will be in accordance with the applicable portions Sections 420 and 424 of the Standard Specifications, except as herein modified.

Description: This work shall consist of a variable depth, portland cement reinforced concrete sidewalk placed in the Riverwalk area.

Materials and Equipment: The materials and equipment shall be in accordance with Articles 420.02 and 420.03 of the Standard Specifications. The concrete shall be Class PV in accordance with Article 1020.04 of the Standard Specifications.

General: Steel reinforcement shall be placed as shown on the plans. Joints shall be constructed of the type and dimensions shown on the plans.

The sidewalk will have a depression for the concrete pavers at the locations shown on the plans. At these locations the brush finish will not be required for sidewalk.

2 inch diameter weep holes shall be cored into or cast into the sidewalk and filled with granular backfill meeting the applicable requirements of Section 209 at the locations shown on the plans.

Method of Measurement: This work will be measured for payment in place and the area computed in square feet.

Basis of Payment: This work will be paid for at the contract unit price per square foot for REINFORCED PORTLAND CEMENT CONCRETE SIDEWALK, VARIABLE DEPTH, which price shall include all required joints, reinforcement, finishing, weep hole construction, and all other items needed to complete this item of work.

DRILL AND GROUT #6 TIE BARS

Description: The work will consist of furnishing and installing tie bars in existing Portland Cement Concrete (PCC) bases where new PCC Bases and pavement patches are poured against existing PCC Bases at locations shown on the Plans and as designated by the Engineer.

General Requirements: Materials will meet the requirements of Article 1006.06 of the Standard Specifications for Dowel Rods and Article 1024.01 of the Standard Specifications for Non-shrink Grout.

Bars will be located as indicated on the plans. Individual bar locations will be shifted at least five (5) inches away from existing cracks, joints and unsound concrete.

Holes for tie bars will be drilled with suitable equipment for this purpose to the depth shown and to a diameter large enough to allow grouting around the tie bars. The tie bars will be secured in the drilled holes with non-shrink grout. The grout will be allowed to cure before the concrete for new bases are poured.

Method of Measurement: This work is to be measured for per each tie bar grouted in place.

Basis of Payment: This work will be paid for at the contract unit price per each for DRILL & GROUT #6 TIE BARS, which price will include the cost of all labor, equipment, materials including Tie Bars and non-shrink grout and all other work or material required to complete the work as specified.

BITUMINOUS CONCRETE SURFACE REMOVAL (VARIABLE DEPTH)

Work under this item will be in accordance with Section 440 of the Standard Specifications, except as herein modified.

Description: This work will consist of removing the existing bituminous concrete surface to varying depths and to the limits specified on the plans, sawcutting and constructing butt joints, and as directed by the Engineer.

General Requirements: The equipment used for surface removal will be a self-propelled grinding machine capable of removing in one pass, a layer of pavement at least six feet (6') in width and zero to three (0" - 3") inches in depth. The grinding machine will be on not less than a 6-foot wheel base and will be capable of grinding variable depths required. It will be required that the material be windrolled and conveyed by a continuous conveyor to a truck for removal from the construction site. It will also have an effective means for removing excess material from the surface and for preventing any dust resulting from the operation escaping into the air.

Prior to the start of grinding operations and until all excess material, dust or debris is removed by mechanical sweeper, all catch basins and open lid manholes will be plated or have Inlet Filters installed prevent any grinding debris from entering the sewer system. Any debris entering a manhole must be immediately removed.

Grindings will be immediately removed from the site and legally disposed of in accordance with Article 202.03. Stockpiling of any debris resulting from this item will not be allowed.

Upon completion of the grinding operation, any excess material, dust or debris remaining on the pavement will be removed by means of a mechanical street sweeper following directly behind the grinding operation.

During the removal of the bituminous concrete surface, the Contractor may encounter P.C.C. base course in patches, utility repairs, structure adjustment or other minor portions of the area being milled, which are undetectable prior to the milling operation. It will be understood and agreed upon that no extra compensation will be allowed to the Contractor to grind (mill) P.C.C. Pavement and/or Base.

The nature and condition of the equipment and the manner of performing the work will be such that the ground surface is not torn, gouged, shoved or otherwise injured by the grinding operations. Removing the pavement to the required depth adjacent to structures in the pavement surface such as drain castings and utility covers will be accomplished in a manner satisfactory to the Engineer. This work will be included in the cost of Bituminous Concrete Surface Removal (Variable Depth). Sawcutting and removing the pavement to construct butt joints will be accomplished in a manner satisfactory to the Engineer. No separate payment will be made for sawcutting and constructing butt joints. This work will be included in the cost of Bituminous Concrete Surface Removal (Variable Depth).

Also included in this item is the removal and legal disposal of any existing debris accumulated in the gutter or at the face of curb. This work will be included in this item and will not be measured for payment.

The milling of side streets at intersections, alley returns, and other confined areas may be accomplished through the use of a smaller, more maneuverable machine other than specified above.

The Contractor will be responsible for avoiding dislodging any part of the existing brick base course underneath the bituminous concrete surface.

Method of Measurement: BITUMINOUS CONCRETE SURFACE REMOVAL (VARIABLE DEPTH) will be measured in place and the area computed in square yards. The square yards measured will be paid for only once, regardless of the number of passes needed to remove the material.

Basis of Payment: This work will be paid for at the contract unit price per square yard for BITUMINOUS CONCRETE SURFACE REMOVAL (VARIABLE DEPTH), which price will be payment in full for completing the work as specified.

TREE REMOVAL (SPECIAL)

Description: This work shall include the removal and disposal of the existing trees planted along the sidewalks within the project limits.

General: All work shall be performed in accordance with the Section 201 of the Standard Specifications, as modified herein and as directed by the Engineer.

The tree and roots shall be completely removed. All topsoil and planting material shall be removed. The hole shall be backfilled with suitable embankment material and compacted in a manner meeting the approval of the Engineer. The cost of backfilling the hole will not be paid for separately but will be considered as included in the contract unit price bid.

Method of Measurement: Tree Removal (Special) will be measured for payment in place as each at each location shown on the plans.

Basis of Payment: This work will be paid for at the contract unit price each for TREE REMOVAL (SPECIAL), which price shall include all necessary materials, labor, tools and equipment necessary to complete the work including removal and disposal of the tree, roots and planting material and backfilling of the hole.

EXPLORATION TRENCH, SPECIAL

Description: This item shall consist of constructing a trench by methods and means as approved by the Engineer, to verify the horizontal and vertical location of existing utilities within the Contract Limits shown on the Plans and/or as directed by the Engineer.

Construction Requirements: The exploratory trench shall be constructed at the locations shown on the plans or as directed by the Engineer. The depth and width of the trench shall be sufficient to allow positive identification of the type, size and depth on the utility(s).

For utilities of known ownership, the Contractor shall contact the owner of the utility at least seventy-two (72) hours prior to exploratory digging, to provide the anticipated location and to be available during exploration activities.

When the existing utility is encountered, the Contractor shall verify the facility, obtain the horizontal and vertical (to the top of the conduit or pipe) data, and transmit a copy of this data to the Engineer. Located utilities shall be marked with lath, flags of any other suitable method which will provide positive identification throughout construction as approved by the Engineer.

Any costs resulting from damage incurred to any utility (including interruption of service provided) shall be the sole responsibility of the Contractor in accordance with Article 105.07 of the Standard Specifications.

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. The excavated area shall be restored to its original condition as directed of the Engineer.

When approved by the Engineer, the Contractor may use other means of locating existing utilities.

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

Basis of Payment: This work will be paid for at the contract unit price per foot of EXPLORATION TRENCH, SPECIAL.

PROTECTION OF EXISTING BUILDINGS AND STRUCTURES (SPECIAL)

DESCRIPTION: This work consists of protecting, inspecting, documenting and monitoring the condition of the existing buildings and structures directly adjacent to the project limits in accordance with the requirements of Section 107 of the Standard Specifications, except as herein modified, shown on the Plans, or as directed by the Engineer.

The Contractor shall be responsible for assuring that the buildings and structures directly adjacent to the project limits incur no damage during construction of the proposed project and that no existing damage or defect in these buildings and structures becomes attributable to this project.

The Contractor shall be responsible for recording the initial condition of those elements of the existing buildings and structures that may be susceptible to damage and monitoring them during construction. The contractor shall photograph the condition of the relevant buildings and structures prior to the start of construction activities. The contractor shall not enter any of the buildings without first contacting and obtaining permission from the building owners (listed below) and/or their tenants.

Due to the proximity of the buildings to the existing bridge, vibrations due to construction activities are of paramount concern. Construction induced vibrations shall be limited to prevent damage in the buildings and structures directly adjacent to the project limits.

The contractor shall be responsible for preventing undermining and de-stabilization of the existing buildings and structures adjacent to proposed excavations. When the proposed excavation is adjacent to an existing building or structure the contractor shall ensure, to the satisfaction of the Engineer that the excavation activities do not act to undermine or de-stabilize the existing building or structure. If the proposed excavation is determined to undermine or destabilize an existing building or structure, excavation work shall be stopped in this area and the Engineer shall be notified to determine the proper course of action.

Should damages to existing building or structures related to construction activities occur, the Contractor shall repair the existing building and/or structure at his or her own expense to the satisfaction of the Engineer.

LIST OF BUILDING/STRUCTURE OWNERS:

Property Address	Owner
33 North Island Avenue	John Tsichlis Nick Tsichlis JNP Enterprises 7063 W. Belmont Chicago, IL 60634 (773) 786-2768
2 thru 8 West Wilson Street	Jerry Dempsey Batavia Shopping Plaza, Inc. Batavia Enterprises 140 First Street Batavia, IL 60510 (630) 879-3680
10 West Wilson Street	Harbour Land Enterprise (630) 879-8800
1 & 3 East Wilson Street	Greg Scharnweber C.F. Incorporated 10 Brier Lane Geneva, IL 60134 (630) 208-1319
5 East Wilson Street	Darren Besic 5 E. Wilson St. (630) 406-8555
7 East Wilson Street	Craig Foltos 7 E. Wilson St. (630) 879-5253
9 thru 13 East Wilson Street	Scott Karll 456 Hunter Drive Carol Stream, IL 60188 (630) 880-1039
15 East Wilson Street	Grant Markuson (630)761-6580
2 East Wilson Street	City of Batavia 100 N. Island Avenue Batavia, IL 60510 (630) 879-1424
4 East Wilson Street	Bob Gunter 7608 Drew Avenue Burr Ridge, IL 60527 (708)516-2769
8 East Wilson Street	Chris Rosner 525 N. River Street, Suite 200 Batavia, IL 60510 (630) 406-5600

10 East Wilson Street	Joseph Marconi 9 S. Batavia Avenue Batavia, IL 60510 (630) 879-0243
12 East Wilson Street	Ron Royce 12 E. Wilson St. Batavia, IL 60510 (630) 879-1400
14 East Wilson Street	Joseph Marconi 9 S. Batavia Avenue Batavia, IL 60510 (630) 879-0243

METHOD OF MEASUREMENT: This item will not be measured separately.

BASIS OF PAYMENT: This work will be considered incidental to the contract.

BRIDGE APPROACH PAVEMENT (SPECIAL)

DESCRIPTION: This work consists of furnishing all labor, materials, tools, and equipment required to furnish and place the bridge approach pavement in accordance with the requirements of Secti+on 420 of the Standard Specifications, except as herein modified, shown on the Plans, or as directed by the Engineer.

METHOD OF MEASUREMENT: This work will be measured for payment in square yards of bridge approach pavement acceptably furnished and placed within the limits shown on the Plans and as directed by the Engineer.

BASIS OF PAYMENT: This work will be paid for at the contract unit price per square yard for BRIDGE APPROACH PAVEMENT (SPECIAL), which price must include all costs of labor, materials, tools, equipment, finish and incidental items as specified or required to complete this item.

RIGID FOAM INSULATION (SPECIAL)

DESCRIPTION: This work consists of furnishing all labor, materials, tools, and equipment required to furnish and place rigid foam insulation on the bottom face of abutment footings.

SUBMITTALS: Product data for each type of product indicated shall be submitted to the Engineer for approval according to the requirements specified herein. In addition, the Contractor shall furnish full-size units as samples for verification, product test reports based on evaluation of comprehensive tests performed by a qualified testing agency, and research/evaluation reports for each type of insulation indicated.

QUALITY ASSURANCE: Each type of insulation should be obtained through one source. Provide insulation and related materials with the fire-test-response characteristics indicated

below, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with the appropriate markings of applicable testing and inspecting agency.

(a) Surface-Burning Characteristics: ASTM E 84.
(b) Fire-Resistance Ratings: ASTM E 119.
(c) Combustion Characteristics: ASTM E 136.

DELIVERY, STORAGE, AND HANDLING: Protect insulation materials from physical damage and from deterioration by moisture, soiling and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation. Protect plastic insulation as follows:

(a) Do not expose to sunlight, except to extent necessary for period of installation and concealment.
(b) Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
(c) Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

MANUFACTURERS: Subject to compliance with requirements, manufacturers offering Extruded-Polystyrene Board Insulation that may be incorporated into the Work include, but are not limited to, the following:

(a) DiversiFoam Products.
(b) Dow Chemical Company.
(c) Owens Corning
(d) Tenneco Building Products.

MATERIALS: Provide insulating materials that comply with requirements and with referenced standards. Preformed units should include sizes to fit applications indicated; selected from manufacturer's standard thicknesses, widths, and lengths. Insulation should be of Extruded-Polystyrene Board conforming to ASTM C 578, Type IV with the following material properties:

(a) Density of 1.60 lb/cu. Ft. (26 kg/cu. m), unless otherwise indicated.
(b) Maximum flame-spread and smoke-developed indices of 75 and 450, respectively.

INSTALLATION: Examine conditions, with Installer present, for conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

Remove projections capable of puncturing or of interfering with insulation placement.

Comply with insulation manufacturer's written instructions applicable to products and application indicated. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice and snow. Extend insulation in thickness indicated to envelope entire area to be insulation. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement. Apply single layer of insulation to produce

thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.

Protect top surface of horizontal insulation from damage during concrete work by applying protection board.

METHOD OF PAYMENT: This item will not be measured separately for payment.

BASIS OF PAYMENT: This work will be considered incidental to the pay item CONCRETE STRUCTURES which will include all costs of labor, materials, tools and equipment to complete this item.

DRILL AND GROUT DOWEL BARS (SPECIAL)

Description: This work shall consist of drilling and epoxy grouting dowel bars into hardened concrete as indicated on the Plans and as directed by the Engineer. All work shall be in accordance with the applicable requirements of Section 584 of the Standard Specifications, and as specified herein.

Method of Measurement: Drilling and grouting of dowel bars shall be measured for payment by the number of (each) regardless of size, length, embedment, or other requirements for the dowel bars. No other measurement shall be made for this work.

Basis of Payment: The work under this item will be paid for at the Contract unit price for DRILL AND GROUT DOWEL BARS (SPECIAL), as indicated on the Plans and as specified herein.

REMOVE EXISTING CONCRETE ARCH BRIDGE

DESCRIPTION. This work consists of furnishing all labor, materials, tools, and equipment required to remove the existing arch bridge in stages including the removal of the arches, piers, spandrel walls, retaining walls, bridge rail, lighting, abandoned utilities carried by the bridge, fill contained within the existing spandrel walls and retaining walls, pavement, sidewalk, metal stairs and all items associated with the bridge as indicated in the plans and as directed by the Engineer. At the existing abutment, the arches will be removed to the level of the skewback. Concrete removal required to reuse portions of the existing abutments below the level of the skewback will not be paid for as part of this pay item but be paid for as CONCRETE REMOVAL. Demolition procedure shall not de-stabilize the existing bridge.

This work must be performed in accordance with Section 501 of the Standard Specifications and as directed by the Engineer.

SUBMITTALS: The Contractor performing the work described in this specification must submit for approval at least thirty (30) days prior to starting the work:

a) Demolition procedure and schedule including equipment to be used.

b) Supporting engineering calculations used to develop the demolition procedure must be submitted to the Engineer for approval. The calculations must be prepared and sealed by a registered Structural Engineer licensed in the State of Illinois.

METHOD OF MEASUREMENT. This work will be measured for payment at the lump sum price for REMOVE EXISTING CONCRETE ARCH BRIDGE that is acceptably completed at the locations shown on the Plans or as directed by the Engineer.

BASIS OF PAYMENT. This work will be paid for at the contract lump sum price for REMOVE EXISTING CONCRETE ARCH BRIDGE, which price will include all costs for labor, materials, tools, equipment, excavation, and incidental items as specified or required to complete this item.

COFFERDAMS (SPECIAL)

Description: This work consists of furnishing all labor, materials, tools, and equipment required to design, furnish, and install a cofferdam for the removal of the existing structures and the construction of the proposed structures as indicated in the plans and as directed by the Engineer.

This work must be performed in accordance with Section 502 of the Standard Specifications, except as modified herein, shown on the plans or as directed by the Engineer.

Earth cofferdams will not be permitted. Acceptable cofferdams types include large diameter stone, pre-cast concrete block or jersey barrier, sand bags, water-filled dams, mechanism type portable dams or steel sheeting/cellular type dams. All cofferdam and in-river work shall be in accordance with the U.S. Army Corps of Engineers Permit #LRC-2006-544 issued for this project and the Illinois Department of Natural Resources Floodway Permit.

The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water including cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR permit number NE2006064 which was issued for the permanent construction.

Submittals: The Contractor performing the work described in this specification must submit for approval at least thirty (30) days prior to starting the work:

c) Cofferdam plan, sequence, types of materials and equipment to be used.

d) Supporting engineering calculations used to develop the cofferdam plan and sequence must be submitted to the Engineer for approval.

Method of Measurement: This work will be measured for payment at the contract unit price each for COFFERDAM (SPECIAL) that is acceptably furnished and installed at the locations shown on the Plans or as directed by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price each for COFFERDAM (SPECIAL), which price will include all costs for labor, materials, tools, equipment, excavation, and incidental items as specified or required to complete this item.

TEMPORARY PIER SUPPORT (SPECIAL)

DESCRIPTION: This work consists of designing and installing temporary pier supports at Pier 1 and Pier 2 to temporarily support the pier to allow for staged construction in accordance with this Specification as shown on the Plans and as directed by the Engineer.

PERFORMANCE REQUIREMENTS: Design and install temporarily support capable of withstanding the all applicable loads in the partially constructed pier in accordance with AASHTO Standard Specifications for Highway Bridges, 2002 (17^{th} Edition).

SUBMITTALS: The Contractor performing the work described in this specification must submit for approval:

e) Engineering calculations used to design the temporary support must be submitted to the Engineer for approval at least thirty (30) days prior to starting the work. The calculations must be prepared and sealed by a registered Structural Engineer licensed in the State of Illinois.

f) The shop drawings must show:

1. Details of the temporary support configuration, materials and connections.

2. Details of equipment and procedures for jacking and removing temporary support.

METHOD OF MEASUREMENT: This work will not be measured separately.

BASIS OF PAYMENT: This work will not be paid for separately and shall be considered incidental to the pay item CONCRETE STRUCTURES, which will include all costs for labor, materials, tools, equipment and incidental items as specified or required to complete this item.

MICROPILE, 200 TON (SPECIAL)

DESCRIPTION: This work consists of designing and installing small diameter, high capacity thick-walled pipe piles and filled with cement grout in accordance with this Specification and as shown on the Plans. Commonly known as minipiles or pin piles, the micropiles must be used to transfer structural load to competent bearing strata.

Construction of the micropile shaft consists of structural steel pipe, and neat cement grout. The piles are constructed by drilling the outer steel casing to the desired rock strata, and filling the casing with cement grout. The steel casing is left as part of the pile.

REFERENCES: The following American Society for Testing and Materials Standards (ASTM) referred to in this section are listed below with their complete designation and title including the year of adoption or revision and are declared to be a part of this section, the same as if fully set forth herein.

A252-90	Specification for Welded and Seamless Steel Pipe Piles
C150-92	Standard Specification for Portland Cement II, III and V
C109-94a	Test Method for Compressive Strength of Hydraulic Strength Cement Mortars

PERFORMANCE REQUIREMENTS: Design and install micropiles with allowable axial load capacity in compression. The Contractor will be responsible for the method of grouting inside and outside of the piles to obtain the required capacities. In general, the micropiles must be designed in accordance with the requirements specified herein, and shown on the plans.

SUBMITTALS: The Contractor performing the work described in this specification must submit proof of:

g) Ten projects on which he has successfully designed and installed high capacity bored-in micropiles using nondisplacement methods under similar site conditions.
h) The foreman for this work having supervised the successful installation of micropiles on at least ten projects.

i) Engineering calculations used to design the micropiles must be submitted to the Engineer for approval at least thirty (30) days prior to starting the work. The calculations must be prepared and sealed by a registered Structural Engineer licensed in the State of Illinois.

j) The shop drawings must show:

1. Details of the micropile configuration, and including nominal diameter, length, and embedment length.

2. Details of equipment and procedures for pile installation, including consecutive steps for pile installation.

3. Procedures for advancing through boulders, rubble and other obstructions and coring through rock.

4. Procedures for control and removal of all spoil. Pile layout, showing the proposed sequence of installation. This sequence must be coordinated with the proposed phasing and scheduling requirements stated in the contract plans.

Specifications of material and equipment to be used for the installation of micropiles piles must be submitted to the Engineer for approval at least 30 days prior to starting the work. The following items must be submitted, as a minimum:

1. Manufacturer's certification of steel casing.
2. Grout mix design and typical 28-day compressive strength as determined by an independent testing laboratory.
3. Manufacturer's literature for drilling equipment.
4. Manufacturer's literature for any admixtures used in the grout mix, and manufacturers literature for grout plant and muter.

As-built records of the micropile pile installation must be furnished to the Engineer within twenty (20) days of the completion of the work. The as-built record of a micropile pile must be contained on a single sheet and must contain the following information as a minimum:

1. Date constructed
2. Location
3. Grout mix used
4. Depth drilled and tip elevation
5. Total grout used
6. Size and type of steel casing
7. Grout injection pressure
8. Log of soil/rock drilled
9. Final base and top elevation of outer casing.

JOB CONDITIONS: The Contractor must, throughout the duration of the construction work, coordinate his work and cooperate with authorities and other contractors in order to allow on-going operations to continue undisturbed throughout the micropile pile program. The Contractor must contain his micropile pile and grout products, drill cuttings, drilling-fluid, and dust, from his operations in such fashion as to not interfere with adjacent operations.

EQUIPMENT: Drilling equipment must be rotary pneumatic drilling equipment suitably and adequately powered with sufficient headroom specifications to permit working in the areas where the micropile piles are to be installed.

The grout plant must be designed to handle the specified materials for this type of work. Only approved equipment must be used.

MATERIALS:

(a) Casing: 9 5/8-inch O.D. by 0.545 inch (min) wall. Casing having physical properties equal to or exceeding ASTM A252, Grade 3 with a minimum yield strength of 80 ksi or API oil field casing Grade N-80, 5CT N80). Physical properties must be determined by coupon tests of random samples. A letter must be provided by the supplier verifying the lot-coupon relationship. Drill tooling and methods should be selected by the Micropile contractor based on previous experience in the soil and rock conditions present at the site. The Contractor must have the 9 5/8-inch O.D. by 0.545 inch (min) wall pipe shop flush-joint threaded in predetermined lengths.

(b) Cement: must meet the requirements of ACI 318. Cement furnished must be in paper bags or bulk tanker and clearly labeled as to type and manufacturer. A sufficient quantity of cement must be stored at or near the site of the work to ensure

that grouting operations will not be delayed by shortage of cement. The use of bulk cement will be permitted provided the Contractor employs methods of handling, transportation and storage that are satisfactory to the Engineer.

(c) Water: Must be potable or tested for suitability in grout mixes.

(d) Admixture: A fluidifier/expansion admixture may not be used in the cement grout unless it is approved by the Engineer.

(e) Grout: A mixture of Portland Cement, admixture and water. Grout must have a 28 day strength of 5,000 psi when tested in accordance with ASTM C109. The grout must consist of a neat cement or sand cement mixture of Type II, III or V portland cement conforming to Section 1020 of the Standard Specifications. Expansive admixtures may not be used except to seal the encapsulations and anchorage covers. Admixtures must be to control bleed, improve flowability, reduce water content, and retard set may be used if approved by the Engineer. Accelerators and admixtures containing chlorides are not permitted. Contractor must provide molds and make test cubes (1 set of 3 cubes or cylinders per micropile), and have compressive strength tests performed by an approved independent testing laboratory with the results submitted to the Engineer.

EXAMINATION: Verify that site conditions will support drilling equipment required for pile drilling operations, and that equipment meets clearance required to install the piles at the proposed locations.

PREPARATION: Use a drilling method which will not cause damage to nearby utility tunnels and all other structures and protect structures near the work from damage.

INSTALLATION: The Contractor must determine the installation method for the micropiles, subject to the following:

(a) Micropile installation, must be by non-vibratory and non - displacement methods. Drilling must be performed by rotating or oscillating a casing and applying a percussive load, as required. Drilling and excavation must be performed in such a manner to minimize collapse of the hole. Blasting is not permitted.

(b) Micropile installation at a particular pylon support must start with the piles located furthest away from the tunnel, working towards the tunnel, and finishing with the piles closest to the tunnel.

(c) Post-grouting of the pile must be performed if required to meet micropile design capacity. Post grouting must consist of pressure grouting the soil and rock around the pile plus the soil and rock below the tip of the pile. Pressure grouting of the, soil and rock around the pile must be performed from within the pile. The Contractor's equipment and methods must permit him to regrout several times if necessary to achieve the required capacity. The annular space between the pipe casing and soil/rock side walls must be completely filled in the finished pile.

PILE LOAD TESTS: The Contractor must perform two micropile load tests, one for the piles supporting the west abutment and one for the piles supporting the east abutment. These tests are required to verify the adequacy of the micropile system as installed. A separate test pile is not required at each location, rather a pile within the group may be selected for testing and if it successfully passes the load test it may be incorporated into the final pile group.

The Contractor must submit, for review and acceptance by the Engineer, the proposed micropile load testing procedure. This submittal must be made at least 28 calendar days prior to starting the load testing.

The micropile load test program proposed by the Contractor must be in general conformance with ASTM D-1143 or D-3689, and must at a minimum contain the following information:

(a) Type and Accuracy of apparatus for measuring load
(b) Type and Accuracy of apparatus for applying load
(c) Type and accuracy of apparatus for measuring pile deformation
(d) Type and capacity of the reaction load system
(e) Hydraulic jack calibration report
(f) Micropile Loading Criteria and Acceptance Criteria

If the micropile load test fails to meet the design requirements, the Contractor must determine the cause, and must modify the micropile design and/or installation methods and retest the new system as directed by the Engineer.

TOLERANCES:

(a) Maximum variation from vertical for plumb piles: 1 in 48.

(b) Maximum variation for battered piles: 1.5 in 48.

(c) Top cut-off elevation: maximum 3 inches from elevation indicated on plans.

(d) Maximum variation of pile head from plan location: 4 inches.

UNACCEPTABLE MICROPILES: Micropiles that do not meet the tolerances, are placed out of position, are below cut-off elevations or are damaged must be replaced to conform to specified requirements at Contractor's expense.

PROTECTIONS AND CLEAN-UP:

(a) During grouting operations, the Contractor must take such precautions as may be necessary to prevent dust, drill cuttings, equipment exhaust, oil, wash water, and grout from defacing or damaging any adjacent structure or equipment. Any accidental unforeseen spillage of grout must be cleared immediately to reduce the possibility of staining existing structures.

(b) This protection must include the covering with plastic sheeting or similar material of all structure walls near drilling and grouting operations. The Contractor must furnish

such pumps as may be necessary to care for waste water and grout from his operations, and clean up all waste resulting from his operations and restore any damage or defaced structures to original condition. The site ground must be cleaned and restored to its original condition.

(c) Upon completion of daily grout operations, excess grout in the hoses, mixer and grout pump must be trapped in a confined section of the construction site and immediately removed off-site.

METHOD OF MEASUREMENT: This work will be measured for payment for each MICROPILE, 200 TON that is acceptably furnished and installed at the locations shown on the Plans or as directed by the Engineer.

BASIS OF PAYMENT: This work will be paid for at the contract unit price per each for MICROPILE, 200 TON, which price will include all costs for labor, materials, tools, equipment, excavation, and incidental items as specified or required to complete this item.

STRIP SEAL EXPANSION JOINT (SPECIAL)

DESCRIPTION: This work shall consist of furnishing and installing an expansion joint system as shown on the plans and as specified herein. The joint system shall be comprised of either steel locking edge rails or plates, with studs and a preformed elastomeric seal. At the sidewalks the expansion joint system will include a cover plate with sill plate supports as shown on the Plans.

MATERIALS:

(a) Steel Locking Edge Rails for the Preformed Elastomeric Strip Seal System. The steel locking edge rails shall be either a one-piece extrusion (rolled section) or a combination of extruded and stock plate, shop welded according to Section 505. All steel shall be AASHTO M270, Grade 250 (Grade 36) minimum. The locking portion of the steel edge rail shall be extruded, with a cavity, properly shaped to allow the insertion of the strip seal gland and the development of a mechanical interlock. The top edge of the steel edge rails shall not contain any horizontal projections unless shown on the Plans.

(b) Steel Plates for the Seal System. The plates and bars or other structural shapes provided as edge reinforcement at joints, between adjacent spans, shall be accurately fabricated in the shop to conform to the section (profile and slope) of the concrete floor or sidewalk. The fabrication shall conform to Section 505. The plates shall be held securely in the correct position during the placing of the concrete.

(c) Anchor Studs. The steel locking edge rails or plates shall contain anchor studs and/or anchor plates of the size shown on the plans for the purpose of firmly anchoring the expansion joint system in either portland cement concrete or polymer concrete, depending on the application. The anchor studs shall be according to Article 1006.32 and shall be installed in the shop prior to painting or galvanizing.

(d) Preformed Elastomeric Strip Seal. Unless otherwise shown on the Plans, the neoprene seals shall be continuous without any field splices. The elastomeric gland shall meet the physical requirements of ASTM D5973. The gland material shall have a shallow "v" profile and shall contain "locking ears" that, when inserted in the steel locking edge rails, forms a mechanical interlock. The elastomeric gland shall be of an appropriate size to accommodate the rated movement longitudinal and transverse movements specified on the plans. Expansion joint size shown in the plans and Bill of Material may only be nominal total expected longitudinal movement. The Contractor shall coordinate the manufacturer of the strip seal to accommodate both anticipated longitudinal and transverse movements due to hot and cold climatic conditions as shown on the Plans. The Engineer should be consulted seeking approval if the longitudinal rating of the strip seal proposed by the Contractor significantly exceeds that of what is shown in Plans in order to accommodate the anticipated transverse/differential movement of the joint system. The Contractor shall submit material and installation recommendation documents including any proprietary information from the manufacturer and test results available verifying combined longitudinal and transverse movement capacities.

(e) Adhesive/Lubricant. The adhesive/lubricant shall comply with the requirements of ASTM D4070.

(f) Cover Plates at Sidewalk Joints. The cover plates are to be stainless steel with a slip-resistant surface treatment as manufactured by SlipNOT Metal Safety Flooring, Grade 2 Medium (1-800-754-7668) or Algrip (1-800-345-8170) or Mebac, #4 (1-800-324-8417). The expansion joint rails are to be modified to accept installation of the cover plate at sidewalk and top of stair landing locations as shown on the Plans. Flat head cap screws with nut are to be 18-8 or 316 stainless steel.

(g) All steel material of the expansion joints, except the stainless steel cover plates, is to be cleaned and receive one shop coat of the inorganic zinc rich primer paint per Guide Bridge Special Provision CLEANING AND PAINTING NEW METAL STRUCTURES.

(h) Neoprene Sponge Joint. At the northwest stair provide a neoprene sponge expansion joint seal rated for a 1-inch nominal opening at 50° F at the bridge sidewalk level, as shown on the Plans. The neoprene sponge will be installed using a two-component epoxy adhesive.

CONSTRUCTION:

Installation of expansion devices shall be according to the contract specifications, plans, manufacturer's recommendations and approved shop drawings.

(a) Steel Plates or locking edge rails. After fabrication the steel plates or locking edge rails shall be given one shop coat of the paint specified for structural steel. The steel components may be hot dip galvanized according to AASHTO M111 and ASTM A385 in lieu of shop painting at the manufacturer's option. The steel components of the joint system shall be properly aligned and set prior to pouring the anchorage material. For expansion joints, the joint opening shall be adjusted according to the temperature at the time of placing so that the specified opening will be secured at a temperature of 10 °C (50 °F).

Unless explicitly shown otherwise on plans, the joint opening for each 10 m (100 ft.) of bridge between the nearest fixed bearings each way from the joint shall be reduced 1 mm (1/8 in.) from the amount specified, for each 8 °C (15 °F) the temperature at the time of placing exceeds 10 °C (50 °F) and increased 1 mm (1/8 in.) from the amount specified, for each 8 °C (15 °F) the temperature at the time of placing is below 10 °C (50 °F).

(b) Preformed Elastomeric Strip Seal. Once the anchoring material has fully cured according to specifications, preparation for the placement of the gland can begin.

(1) Surface Preparation. The cavity portion of the locking edge rails must be cleaned of all foreign material prior to placement of the strip seal. Surface rusting shall be removed and any bare steel touched up according to Article 506.05. The cavity shall be cleaned of debris using compressed air with a minimum pressure of 620 kPa (90 psi). The air compressor shall be equipped with traps to prevent the inclusion of water and/or oil in the air line. Any oil left on the surface of the steel extrusion at this stage shall be removed using a solvent recommended by the strip seal manufacturer. Once the surface preparation has been completed, the steel extrusion cavities must be kept clean and dry until the strip seal is placed.

(2) Placement of Elastomeric Strip Seal. The placement of the strip seal will only be permitted when the steel locking edge rail cavities are in a clean and dry state and the ambient air and steel substrate temperature are above the minimum temperature recommended by the strip seal manufacturer. Prior to inserting the strip seal in the steel retainer cavities, the "locking ears" portion of the seal shall be coated with the approved adhesive/lubricant. Only about 1.5 m (5 ft) of gland should be coated at a time to prevent the lubricant/adhesive from drying prior to insertion into the cavities of the steel locking edge rails. After each section is coated, the coated portion of the seal should be inserted in the steel locking edge rail cavities using tools and procedures recommended by the strip seal manufacturer. Under no circumstances shall any uncoated "locking ears" be permitted in the joint.

(c) End Treatment. The end treatment for curbs, parapets and sidewalks shall be as detailed on the plans and as recommended by the manufacturer of the joint system.

(d) Technical Support. The manufacturer shall supply technical support during surface preparation and the installation of the entire joint system.

METHOD OF MEASUREMENT: This work will be measured for payment in place, in feet, along the centerline of the joint from face to face of structure or end-to-end of a pair of joint bars, regardless of joint width and section, with or without cover plate. The neoprene sponge seal at the northeast stair joint will not be measured for payment but will be considered incidental to this item.

BASIS OF PAYMENT: The expansion joint system(s), measured as specified, will be paid for at the contract unit price per foot for STRIP SEAL EXPANSION JOINT ASSEMBLY regardless of the design movement specified. This price shall be payment in full for all labor, materials, equipment, and manufacturer's technical support required for surface preparation and joint installation.

BAR COUPLERS (SPECIAL)

DESCRIPTION: This work shall consist of coupling reinforcing steel with mechanical butt splices utilizing lockshear bolts and internal serrated grip rails within the coupling sleeve as indicated on the Plans and as directed by the Engineer.

All work shall be in accordance with the applicable requirements of Section 508 of the Standard Specifications, and as specified herein.

PERFORMANCE REQUIRMENTS: Bar couplers shall develop at least 125% of the yield strength of the reinforcement bars being coupled.

SUBMITTALS: The Contractor performing the work described in this specification must submit for approval product literature and applicable tests indicating that the bar couplers meet or exceed the requirements of this specifications.

METHOD OF MEASUREMENT: BAR COUPLERS shall be measured for payment by the number of (each) regardless of size, length or other requirements for the BAR COUPLERS. No other measurement shall be made for this work.

BASIS OF PAYMENT: The work under this item will be paid for at the Contract unit price each for BAR COUPLERS , as indicated on the Plans and as specified herein.

CONCRETE FILL (SPECIAL)

Description: This work consists of furnishing all labor, materials, tools, and equipment required to furnish and place concrete fill in accordance with the requirements of Section 503 of the Standard Specifications, except as herein modified, shown on the Plans, or as directed by the Engineer.

Materials: The concrete used for fill will meet the requirements of Class MS concrete as specified in Article 1020 of the Standard Specifications, except that the concrete strength requirement will be f'c = 1,500 psi at 28 days as specified in the plans.

Construction Requirements: The concrete mix design must be performed by the Contractor and submitted to the Engineer for review and approval. However, the Engineer's approval does not relieve the Contractor of his responsibility for furnishing concrete of the required strength and other specified requirements.

The Contractor must vibrate the concrete, to release entrapped air pockets, by a method approved by the Engineer.

Concrete in freezing weather must conform to the requirements and provisions of Article 1020.13(e) of the Standard Specifications, or as directed by the Engineer.

Concrete curing must be performed in accordance with the applicable portions of Article 1020.13 of the Standard Specifications, and as directed by the Engineer.

Concrete Finishing: The concrete fill for the piers will be trowel finished so as to provide a flat and level surface for the construction of the pier footings.

Method of Measurement: This work will be measured for payment in cubic yards of CONCRETE FILL acceptably furnished and placed within the limits shown on the Plans and as directed by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price per cubic yard for CONCRETE FILL, which price must include all costs of labor, materials, tools, equipment, finish and incidental items as specified or required to complete this item.

FURNISHING, INSTALLING AND STRESSING POST-TENSIONING STRANDS (SPECIAL)

Description: This work consists of furnishing all labor, materials, tools and equipment required to furnish, install, stress, and grout the post-tensioning steel in accordance with the details shown on the plans, as specified herein, or as directed by the Engineer.

This item will also include the furnishing and installing of any appurtenant items necessary for the particular post-tensioning system used, including but not limited to, anchorage assemblies, additional reinforcing bars required to resist stresses caused by anchorage assemblies, ducts, vents, inlets, outlets, and grout used for pressure grouting of the ducts.

Contractor Proposed Options: The Contractor may propose for consideration certain variations from the post-tensioning systems shown in the plans. However, any post-tensioning system proposed by the Contractor shall comply with the following requirements:

1. Materials and devices used in the post-tension system shall conform to the requirements of this Specification.

2. The net compressive stress in the concrete after all losses is at least as large as that provided by the system shown on the Plans.

3. The distribution of individual tendons at each section generally conforms to the distribution shown on the Plans.

4. The ultimate strength of the structure with the proposed post-tensioning systems shall meet the requirements of Section 9 of the AASHTO Standard Specifications for Highway Bridges, 17th Edition; and shall be equivalent to the ultimate strength provided by the original design.

5. Stresses in the concrete and post-tensioning steel at all sections and at all stages of construction meet the requirements of the Design Criteria noted on the Plans.

6. Compliance with all the provisions of the Design Criteria, as noted on the plans.

7. The Contractor fully redesigns and details, as required, all the elements where the alternate post-tensioning system is proposed to be used.

8. The Contractor shall submit complete shop drawings including the post-tensioning scheme and system, reinforcing steel, concrete cover, and design calculations (including short and long term post-tension losses) for the Engineer's review.

9. AASHTO M203 (ASTM A416) Grade 270, low-relaxation 0.6 inch diameter strand and 0.5 inch diameter strand may be substituted for each other on an equal force basis within any tendon size shown by the designer.

Shop Drawings: All shop drawings shall and calculations shall be signed and sealed by an Illinois Licensed Structural Engineer. The Contractor shall submit detailed shop drawings including but not limited to the following:

A. A complete description of, and details covering, each of the post-tensioning systems to be used for permanent and temporary tendons. This shall include:

    1. Designation of the specific post-tensioning steel, anchorage devices, bar couplers, duct material and accessory items.

    2. Properties of each of the components of the post-tensioning system.

    3. Details covering assembly of each type of post-tensioning tendon.

    4. Equipment to be used in the post-tensioning sequence.

    5. Procedure and sequence of operations for post-tensioning and securing tendons.

    6. Procedure for releasing the post-tensioning steel elements.

7. Parameters to be used to calculate the typical tendon force such as; expected friction coefficients, anchor set, wobble coeifficient and post-tension steel relaxation curves.

B. A table detailing the post-tensioning jacking sequence, jacking forces and initial elongations of each tendon at each stage of erection for all post-tensioning.

C. Complete details of the anchorage system for post-tensioning including certified copies of the reports covering tests performed on post-tension anchorage devices as required in the following Materials Section B, and details for any reinforcing steel needed due to stresses imposed in the concrete by anchorage plates.

D. For the operation of grouting post-tensioning tendons, the materials and proportions for grout, details of equipment for mixing and placing grout and methods of mixing and placing grout.

E. Calculations to substantiate the post-tensioning system and procedures to be use including stress-strain curves typical of the post-tensioning steel to be furnished, required jacking forces, elongations of tendons during tensioning, and seating losses. These calculations shall show a typical tendon force after applying the expected friction and wobble coefficients, and anticipated losses including anchor set losses. Elongation calculations shall be revised when necessary to properly reflect the modulus of elasticity and nominal area as furnished by the Manufacturer for the lot of steel being tensioned. Elongation calculations shall also be adjusted, as necessary, based upon the actual coefficient of friction measured and calculated by an in-place friction test.

F. Complete details of the apparatus and method to be used by the Contractor for the test required by the following Materials Sections F.1 and F.2, including the proposed tendons to be tested.

Materials: The materials to be incorporated into work covered by this Section shall conform to the requirements set out herein.

A. Post-tensioning Strand. Unless otherwise noted on the plans, strand shall be uncoated, Grade 270 (1860), low-relaxation sevenwire strand conforming to the requirements of AASHTO M203 (ASTM A416).

B. Post-tension Anchorages. All post-tensioning steel shall be secured at the ends by means of permanent type anchoring devices. Post-tension anchorages shall develop at least 95 percent of the minimum specified ultimate tensile strength of the post--tensioning steel.

Testing of anchorage devices shall be performed in accordance with Article 10.3.2.3 of the *AASHTO LRFD Bridge Construction Specifications, First Edition, 1998 with 1999 and 2000 interims* using samples representing the type of post-tensioning steel, bursting steel grade and configuration, and concrete strength to be used on the project. The test specimen shall be assembled in an unbonded state and, in

testing, the anticipated anchor set shall not be exceeded. Certified copies of test results for the anchorage system shall be supplied to the Engineer. The anchorage system shall be so arranged that the post-tensioning force in the tendon may be verified prior to the removal of the stressing equipment.

For tendon anchorages, the design and furnishing of any local zone reinforcement which is needed to resist bursting and splitting stresses imposed on the concrete by the proposed anchorage system shall be the responsibility of the Contractor at his expense. It shall be the responsibility of the manufacturer to review and approve any local zone reinforcement detailed on the Plans for suitability with the proposed anchorages and concrete strength to be used on the project.

Post-tension anchorage devices shall effectively distribute post-tensioning loads to the concrete and shall conform to the requirements of Section 9.21 of the AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002.

C. Ducts. All duct material shall be sufficiently rigid to withstand loads imposed during placing of concrete and internal pressure during grouting while maintaining its shape, remaining in proper alignment and remaining watertight.

The duct system, including splices and joints, shall be effectively sealed and bonded to prevent entrance of cement paste or water into the system and shall effectively contain pressurized grout during grouting of the tendon. The duct system shall also be capable of withstanding water pressure during flushing of a duct in the event the grouting operation is aborted.

Coupling and transition fittings for ducts shall be polyethylene or polypropylene and shall have sufficient strength to prevent distortion or displacement of the ducts during concrete placement.

The interior diameter of ducts shall be large enough to cause the duct to have an interior area not less than 2.5 times the net area of the post-tension steel.

Material Properties. Except as otherwise noted on the Plans, the type of duct material used shall be corrugated plastic polyethylene or polypropylene duct.

1. Corrugated Polyethylene Plastic. Plastic duct shall be made of high-density polyethylene material and shall conform to the requirements of ASTM D3350-98a, cell classification range 424432C to 335534C.

2. Corrugated Polypropylene Plastic. Plastic duct shall be made of high-density polypropylene conforming to ASTM D4101, cell classification range PP21OB43542 to PP210B65542.

3. The plastic material shall not react with concrete or enhance corrosion of post-tension steel and shall be free of water-soluble chloride. Corrugated plastic duct shall be corrugated with a spiral having a pitch not less than 1/10 of the radius of the duct. The minimum wall thickness

shall be 0.06 inches (1.5 mm) ± 0.01 inches (0.25 mm).

Corrugated plastic duct shall be designed so that a force equal to 40 percent of the ultimate tensile strength of the tendon will be transferred through the duct into the surrounding concrete in a length of 2'-6" (0.76 meters). Twelve static pull out tests shall be conducted to determine compliance of a duct with the force transfer requirement. If ten of these tests exceed the specified force transfer, the duct is acceptable. The Contractor shall provide to the Engineer certified test reports verifying that the duct meets specification requirements in regard to force transfer.

4. Minimum Radius of Curvature. Tendon ducts shall preferably be installed with a radius of curvature of 20 feet (6.1 meters) or more. Ducts with sharper curvature down to a minimum of 10 feet (3 meters) shall have confinement reinforcement detailed to tie the duct into the concrete. Duct curvature with radii less than 10 feet (3 meters) may be approved by the Engineer based on review of test data. The minimum radius for corrugated polyethylene or polypropylene duct shall be 30 feet (9.1 meters). The confinement reinforcement shall be proportioned in accordance with Section D16.3 of the *AASHTO Guide Specifications for Design and Construction of Segmental Concrete Bridges, 2nd Edition.*

D. Sampling and Testing. All testing shall be done in accordance with ASTM Specifications.

The following samples of materials and devices selected at locations designated by the Engineer shall be furnished by the Contractor at his expense.

1. Three samples of 7 foot (2.1-meter)-long post-tensioning wire or bar for each size from each heat number or production Lot.

2. Three samples of 5 foot (1.5-meter)-long post-tensioning strand for each size from each heat number or production Lot.

3. One unit of each post-tension anchorage to be used on the project.

Samples shall be furnished at least one month in advance of the time they are to be incorporated into the work.

The Engineer reserves the right to reject for use any material or device which is obviously defective or was damaged subsequent to testing.

E. Manufacturer's Lots. The manufacturer of post-tensioning steel, post-tension anchorages and bar couplers shall assign an individual number to each Lot of strand, wire, bar or devices at the time of manufacture. Each reel, coil, bundle or package shipped to the project shall be identified by tag or other acceptable means

as to Manufacturer's Lot number. The Contractor shall be responsible for establishing and maintaining a procedure by which all post-tensioning materials and devices can be continuously identified with the Manufacturer's Lot number. Items which at any time cannot be positively identified as to Lot number shall not be incorporated into the work.

Low-relaxation strand shall be clearly identified as required by AASHTO M203 (ASTM A416). Any strand not so identified will not be acceptable.

The Contractor shall furnish manufacturer's certified reports covering the tests required by this Specification. A certified test report stating the guaranteed minimum ultimate tensile, yield strength, elongation and composition shall be furnished for each lot of post-tensioning steel. When requested, typical stress-strain curves for post-tensioning steel shall be furnished. A certified test report stating strength when tested using the type post-tensioning steel to be used in the work shall be furnished for each Lot of post-tension anchorage devices.

F. Testing of Post-tensioning Tendons by the Contractor.

1. General. The Contractor shall perform certain testing of post-tensioning tendons as specified herein.

2. In-place Friction Test of Tendons. For the purpose of accurately determining the friction loss in stressing draped tendons, prior to stressing any draped tendons, the Contractor shall test, in place, a representative draped tendon of each size and type as selected by the Engineer. If deemed necessary by the Engineer to accurately establish friction loss, the Contractor shall perform tests on additional tendons selected by the Engineer.

   The test procedure shall consist of stressing the tendon at an anchor assembly with load cells at the dead end and jacking end. The test specimen shall be tensioned to 80 percent of ultimate in 10 increments. For each increment, the gauge pressure, elongation and load cell forces shall be recorded. The data shall be furnished to the Engineer. The theoretical elongations and post-tensioning forces shown on the post-tensioning shop drawings shall be re-evaluated by the Contractor using the results of the tests and corrected as necessary. Revisions to the theoretical elongations shall be submitted to the Engineer for evaluation and approval. The apparatus and methods used to perform the tests shall be proposed by the Contractor and is subject to the approval of the Engineer.

G. Grout for Tendons.

1. General. The grout to be used to fill the voids in tendons shall consist of portland cement, water and admixtures which impart low water content, flowability, minimum bleeding, water retention, and set retarding

properties (if needed) to the grout. A pre-packaged commercial cement-based grout mixture meeting the requirements of this Specification is recommended. A non-commercial grout may be used subject to approval by the Engineer.

2. Grout Components. Portland cement shall conform to the requirements of AASHTO M85 (ASTM C150) Type I or Type II. The cement shall be fresh and not contain lumps or other indication of hydration or "pack set". The Contractor shall furnish, for each shipment of cement, a manufacturer's report stating the results of tests made on samples of the material taken during production or transfer and certifying that the applicable requirements of AASHTO M85 (ASTM C150) have been met.

   Mineral admixtures may be allowed if improved properties can be demonstrated in testing.

   Fly Ash shall conform to ASTM 618 and have a maximum dosage of 20 percent of the cementitous content.

   Ground granulated blast furnace slag shall conform to ASTM C989 and have a maximum dosage of 50 percent of the cementitous content.

   Silica Fume shall conform to ASTM C1240 and have a maximum dosage of 8 percent of the cementitous.

   The water used in the grout shall be in accordance with Section 1002 of the Standard Specifications.

   Unless specifically noted otherwise on the plans, use of admixtures shall be at the discretion of the Contractor. Admixtures shall conform with ASTM C494, Types D, E, F or G. Air entraining admixtures (if used) shall conform to ASTM C260. Admixtures when incorporated into the grout mixture, shall impart the properties of low water content, good flowability, water retention, and, when necessary, increase in setting time.

   Admixtures containing chlorides (as CL in excess of 0.5 percent by weight of admixture per sack of cement), sulphites, fluorides, nitrates or nitrites shall not be used.

   Anti-bleeding admixtures or pumping aids (admixtures) may be permitted if it is demonstrated by testing that improved properties are achieved. Expansion causing admixtures, such as aluminum or coke breeze, shall not be used.

   When a grout-expanding admixture is required, or is used at the Contractor's option, it shall be well dispersed through the other admixtures. The amount of admixture to obtain a desired amount of expansion shall be determined by tests. If the source of manufacture or

brand of either admixture or cement changes after testing, new tests shall be conducted to determine proper proportions.

All admixtures shall be used in accordance with the instructions of the Manufacturer. The date of manufacture and expiration, if any, shall be clearly stamped on each container. No admixture shall be used for which the shelf life recommended by the manufacturer has expired.

Aggregates (if used) shall conform to ASTM C33 and non-reactive per Appendix ASTM C33. The aggregate shall be fine enough to not restrict movement of the grout through the duct.

3. Grout Properties. The Contractor shall determine the exact kinds of admixtures and proportions of materials to be used to meet the requirements set out in this specification, from prior documented experience with similar materials, equipment and placing conditions, will result in a grout which does not bleed and can be effectively placed. The quantity of water in the grout shall be as low as possible, consistent with the fluidity needed for placing.

   Prior to beginning grouting operations, the Contractor shall furnish to the Engineer, the results of tests performed by a laboratory approved by the Engineer demonstrating that the grout mixture he proposes to use meets the requirements of this Specification. This information shall include a graph relating compressive strength of the grout to age, covering ages from 24 hours to 28 days.

   Pre-packaged grouts shall be mixed and used in complete units only.

   A majority of the water shall be added to the mixer followed by cement and the admixture. The grout shall be mixed in mechanical mixing equipment capable of continuous mixing which will produce a grout free of lumps and undispersed cement. Prebagged grout shall be mixed in complete units. Retempering the grout will not be permitted. Grout shall be continuously agitated until it is pumped.

   The grout shall be placed within 30 minutes following the introduction of the cement to the grout.

4. Required Properties. Grout shall have the following physical properties:

Property	Test Value	Test Method
Water-Cementious Ratio	Max. 0.45	--
Compressive Strength	Min. 3000 psi (21 MPa) @ 7 days and 5000 psi (34.5 MPa) @ 28 days (average of 3 cubes)	ASTM C109*

Initial Set of Grout	Min. 90 minutes	ASTM C266*
Bleeding	0 after 3 hours	ASTM C940
Wick Induced Bleed Test	0% after 4 hours	ASTM C940**
Volume Change	0 @ 24 hours and 0.3% maximum @ 28 days	ASTM C1090
Efflux Time from Flow Cone	Min. 11 seconds ***	ASTM C939

* The test specimen shall be prepared using the materials and in the proportions which are to be used in production of grout.

** Modified ASTM C940 (a) Condition dry ingredients, mixing water, post-tensioning strand and test apparatus overnight at 40 to 50°F (5 to 10°C). (b) Insert 800-ml of mixed condition grout with conditioned water into the 1,000-ml graduate cylinder. Mark the level of the top of the grout. (c) Insert completely a 20 in. (0.5 m) length of conditioned, cleaned, ASTM A416 7-wire strand [0.5 in. (12.7 mm) diameter] into the 1,000-ml graduate. Center and fasten the strand so it remains essentially parallel to the vertical axis of the cylinder. Mark the level of the top of the grout. (d) Measure the level of the bleed water every 15 min. for the first 1 hr and then hourly afterward for 4 hrs. (e) Calculate the bleed water, if any, and the resulting expansion per the procedures outlined in ASTM C940, with the quantity of bleed water expressed as a % of the initial grout volume.

*** The flow cone test shall not apply to grout which contains an admixture imparting a thixotropic consistency to the grout.

Construction Requirements:

A. Post-Tensioning Technician. The post-tensioning supplier shall furnish a qualified technician to the job site as an advisor in the appropriate use of the post-tensioning systems. The technician is to be employed by the post-tensioning supplier and included in the cost of the post-tensioning. The technician shall be on site to inspect the installed post-tensioning components prior to each pour. The technician shall be on site to observe and advise during all stressing and grouting activities.

B. Protection of Post-tensioning Steel. All post-tensioning steel shall be protected against physical damage at all times from manufacture to grouting or encasing in concrete. Post-tensioning steel that has sustained physical damage at any time shall be rejected. Any reel that is found to contain broken wires shall be rejected and the reel replaced.

Post-tensioning steel shall be packaged in containers or shipping forms for protection of the steel against physical damage and corrosion during shipping and storage. A corrosion inhibitor, which prevents rust or other results of corrosion, shall be placed in the package or form, or shall be incorporated in a corrosion inhibitor carrier type packaging material. Only after submittal to and approval by the Engineer, may a corrosion inhibitor be applied directly to the steel. The corrosion inhibitor shall have no deleterious effect on the steel or concrete or bond strength of steel to concrete. The inhibitor shall be water-soluble. The corrosion inhibitor, the amount and time of initial application and the frequency of reapplication shall be subject to the approval of the Engineer. Packaging or forms damaged from any cause shall be immediately replaced or restored to original condition.

The post-tensioning steel shall be stored in a manner which will at all times prevent the packing material from becoming saturated with water and allow a free flow of air around the packages. If the useful life of the corrosion inhibitor in the package expires, it shall immediately be rejuvenated or replaced.

At the time the post-tensioning steel is installed in the work, it shall be free from loose rust, loose mill scale, dirt, paint, oil, grease or other deleterious material. Removal of tightly adhering rust or mill scale will not be required. Post-tensioning steel which has experienced rusting to the extent that it exhibits pits visible to the naked eye shall not be used in the work.

The shipping package or form shall be clearly marked with the heat number and with statement that the package contains high-strength post-tensioning steel, and care is to be used in handling. The type and amount of corrosion inhibitor used, the date when placed, safety orders and instructions for use shall also be marked on the package or form.

When the plans provide for post-tensioning steel to be installed in one unit with a length of post-tensioning steel left projecting to be threaded into another unit during erection, all of the post-tensioning shall be protected from corrosion from immediately after it is installed in the first unit until the tendon is grouted in the second unit as provided below.

All anchorages, end fittings, couplers, and exposed tendons that will not be encased in concrete or grout in the completed work shall be permanently protected against corrosion.

When corrosion protection of in-place post-tensioning steel is required, a corrosion inhibitor that prevents rust or other results of corrosion shall be applied directly to the post-tensioning steel. The corrosion inhibitor shall have no deleterious effect on the post-tensioning steel or grout or bonding of the post-tensioning steel to the grout. The inhibitor shall be water soluble. The corrosion inhibitor, the amount and time of initial application, and the frequency of reapplication shall be subject to the Engineer's approval.

The corrosion inhibitor shall consist of a vapor phase inhibitor (VPI) powder conforming to the provisions of Federal Specification MIL-P-3420F-87 or as otherwise approved by the Engineer.

C. Placement of Ducts. The ducts shall be rigidly supported at the proper locations in

the forms by ties to reinforcing steel that are adequate to prevent displacement during concrete placement. Supplementary support bars shall be used where needed to maintain proper alignment of the duct. Hold-down ties to the forms shall be used when the buoyancy of the ducts in the fluid concrete would lift the reinforcing steel.

Internal ducts shall be rigidly supported by ties to reinforcing steel at a maximum spacing of 2 feet (600 mm).

External ducts shall have a maximum unsupported length of 25 feet (7.6 meters), unless a vibration analysis is made. Any additional mild reinforcing required to support post-tensioning ducts shall be supplied by the Contractor at no expense to the Engineer. The tolerance on the location of the tendons shall be plus or minus % inch (6 mm) at any point.

Joints between sections of duct shall be coupled with positive connections that do not result in angle changes at the joints. The connections shall be sealed with heat-shrink wrapping to prevent the intrusion of cement paste.

After placing of ducts and reinforcement and forming is complete, an inspection shall be made to locate possible duct damage. All unintentional holes or openings in the duct shall be repaired prior to concrete placing.

Grout openings and vents shall be securely anchored to the duct and either to the forms or to reinforcing steel to prevent displacement during concrete-placing operations.

After installation in the forms, the ends of ducts shall at all times be sealed to prevent entry of water and debris.

During concrete placement for precast segments, mandrels shall be used as stiffeners in each duct and shall extend throughout the length of the segment being cast and at least 2 feet (600 mm) into the corresponding duct of the previously cast segment. The mandrels shall be of sufficient rigidity to maintain the duct geometry within a 1/4 inch (6 mm) tolerance and within a 1/8 inch (3 mm) tolerance at the segment joints.

All ducts or anchorage assemblies for permanent post-tensioning shall be provided with vent pipes or other suitable connections at each end and at each side of couplers for the injection of grout after post-tensioning. Ducts shall be vented at the high points of the post-tensioning steel profile when there is more than a 6 inches (150-mm) variation in the vertical position of the duct and the tendon length exceeds 400 feet (122 meters). Where freezing conditions can be anticipated prior to grouting, drains shall be installed at the low points of all tendons to prevent the accumulation of water.

Vents shall be $^{1}/2$ inch (13-mm) minimum diameter plastic pipe. All connections to ducts shall be made with metallic or plastic structural fasteners. Waterproof tape shall be used at all connections including vent and grouting pipes. Plastic components, if selected and approved, shall not react with the concrete or enhance corrosion of the post-tensioning steel, and shall be free of water soluble chlorides.

The vents shall be mortar tight, taped as necessary, and shall provide means for injection of grout through the vents and for sealing the vents. Ends of plastic vents shall be removed to the surface of the concrete after the grout has set.

All grout injection and vent pipes shall be fitted with positive mechanical shut-off valves. Vents and injection pipes shall be fitted with valves, caps or other devices capable of withstanding the pumping pressures.

D. Placement of Post-tensioning Steel. Prior to installation of ducts, the Contractor shall determine the most suitable method of feeding post-tensioning steel into the ducts. Long, draped tendons may necessitate preassembly of the post-tensioning steel in the ducts prior to duct placement or feeding of post-tensioning steel into the in-place ducts prior to draping of the tendon and casting of the concrete.

All post-tensioning steel preassembled in ducts and installed prior to the placement of concrete shall be accurately placed and held in position during concrete placement.

When the post-tensioning steel is installed after the concrete has been placed, the Contractor shall demonstrate to the satisfaction of the Engineer that the ducts are free of water and debris immediately prior to installation of the steel. The total number of strands in an individual tendon may be pulled into the duct as a unit, or the individual strand may be pulled or pushed through the duct. Anchorage devices or block-out templates for anchorages shall be set and held so that their axis coincides with the axis of the tendon and anchor plates are normal in all directions to the tendon.

E. Protection of Steel After Installation. Post-tensioning steel installed in members prior to placing and curing of the concrete, or installed in the duct but not grouted within the time limit specified below, shall be continuously protected against rust or other corrosion by means of a corrosion inhibitor placed in the ducts or directly applied to the steel. The post-tensioning steel shall be so protected until grouted or encased in concrete. Post-tensioning steel installed and tensioned in members after placing and curing of the concrete and grouted within the time limit specified below will not require the use of a corrosion inhibitor described herein, and rust that may form during the interval between tendon installation and grouting will not be cause for rejection of the steel.

The permissible interval between tendon installation and grouting without the use of a corrosion inhibitor for various exposure conditions shall be taken as follows:

Very Damp Atmosphere or over saltwater (Humidity > 70 percent)	7 days
Moderate Atmosphere (Humidity from 40 percent to 70 percent)	15 days
Very Dry Atmosphere (Humidity < 40 percent)	20 days

After tendons are placed in ducts, the openings at the ends of the ducts shall be sealed to prevent entry of moisture.

When steam curing is used, unless anchorage systems mandate its installation, steel for post-tensioning shall not be installed until the steam curing is completed.

Such tendons shall be protected against corrosion by means of a corrosion inhibitor placed in the ducts or on the steel, or *shall* be stressed and grouted within seven days after steam curing.

Whenever electric welding is performed on or near members containing post-tensioning steel, the welding ground shall be attached directly to the steel being welded. All post-tensioning steel and hardware shall be protected from weld spatter or other damage.

F. Placement of Anchorage Hardware. The Contractor is responsible for the proper placement of all materials according to the design documents of the engineer of record and the requirements stipulated by the anchorage device supplier. The Contractor shall exercise all due care and attention in the placement of anchorage hardware, reinforcement, concrete, and consolidation of concrete in anchorage zones. Modifications to the local zone details specified under provisions of Article 9.21.7.3, AASHTO Standard Specifications for Highway Bridges, 17th Edition and by testing as specified herein shall be approved by both the engineer of record and the anchorage device supplier.

G. Post-tensioning Operations.

    A. Stress in Tendons. The design of the structure is based on the assumed friction and wobble coefficient shown in the plans.

    The post-tensioning forces shown are theoretical and do not include losses in the system or thermal affects.

    All post-tensioning shall be tensioned by means of calibrated hydraulic jacks with load measuring devices so that the force of the post-tensioning steel shall not be less than the value shown on the approved shop drawings. The maximum temporary tensile stress (jacking stress) in post-tensioning steel shall not exceed 80 percent of the specific minimum ultimate tensile strength of the post-tensioning steel. The post-tensioning steel shall be anchored at initial stresses in a way that will result in the ultimate retention of permanent forces of not less than those shown on the approved shop drawings, but in no case shall the initial stress at the anchorage, after anchor set, exceed 70 percent of the specified minimum ultimate tensile strength of the post-tensioning steel.

    Permanent force and permanent stress will be considered as the force and stress remaining in the post-tensioning steel after all losses,

including creep and shrinkage of concrete, elastic shortening of concrete, relaxation of steel, thermal affect, losses in post-tensioned post-tensioning steel due to sequence of stressing friction and take-up of anchorages, and all other losses peculiar to the method or system of post-tensioning have taken place or have been provided for in an approved stressing plan.

When friction shall be reduced, water soluble oil or graphite with no corrosive agents may be used as a lubricant subject to the approval of the Engineer. Lubricants shall be flushed from the duct as soon as possible after stressing is completed by use of water pressure. These ducts shall be flushed again just prior to the grouting operations. Each time the ducts are flushed, they shall be immediately blown dry with oil-free air.

B. Stressing Jacks. Each jack used to stress tendons shall be equipped with a pressure gauge having an accurate reading dial at least 6 inch (150 mm) in diameter for determining the jack pressure. The pressure gauge shall be installed at or near the stressing ram. Prior to use for stressing on the project, each jack and its gauge shall be calibrated as a unit by a testing laboratory approved by the Engineer.

Calibration shall be done with the cylinder extension approximately in the position that it will be when applying the final jacking force and with the jacking assembly in an identical configuration to that which will be used at the job site (i.e., same length hydraulic lines). Certified calibration calculations and a calibration chart, both in English (metric) units of measure, shall be furnished to the Inspector for each jack.

Recalibration of each jack shall be done at six month intervals and at other times when requested by the Engineer. At the option of the Contractor, calibrations subsequent to the initial laboratory calibration may be accomplished by the use of a master gauge.

The master gauge shall be calibrated at the same time as the initial calibration of the jacks, and shall be part of the unit for each jack. The data recorded during the initial calibrations shall be furnished to the Engineer for use in the field. The master gauge shall be supplied by the Contractor in a protective waterproof container capable of protecting the calibration of the master gauge during shipment. The Contractor shall provide a quick-attach coupler next to the permanent gauge in the hydraulic lines which enables the quick and easy installation of the master gauge to verify the permanent gauge readings. The master gauge shall remain in the possession of the Engineer for the duration of the project.

If a jack is repaired or modified, the jack shall be recalibrated by the approved testing laboratory. No extra compensation will be allowed for

the initial or subsequent jack calibrations or for the use and required calibration of a master gauge.

C. Stressing of Tendons. Post-tensioning forces shall not be applied until the concrete has attained the specified compressive strength as evidenced by tests on representative samples of the concrete. These samples shall be stored under the same conditions as the concrete in order to accurately represent the curing condition of the concrete in place.

A record of gauge pressures and tendon elongations for each tendon shall be provided by the Contractor for review and approval by the Engineer. Elongations shall be measured to an accuracy of 1/16 inch (1.5 mm). Stressing tails of post-tensioned tendons shall not be cut off until the stressing records have been approved.

The stress in tendons during tensioning shall be determined by the gauge or load cell ratings and shall be verified with the measured elongations. Calculations of anticipated elongations shall utilize the modulus of elasticity, based on nominal area, as furnished by the Manufacturer for the lot of steel being tensioned, or as determined by a bench test of strands used in the work.

All tendons shall be tensioned to a preliminary force to eliminate any take-up in the tensioning system before elongation readings are started. This preliminary force shall be 20 percent of the final jacking force. The initial force shall be measured by a dynamometer, or by other approved method, so that its amount can be used as a check against elongation as computed and as measured. Each strand shall be marked prior to final stressing to permit measurement of elongation and to ensure that all anchor wedges set properly. The elongation in the tendon shall be measured before and after release of the jack in order to determine the actual anchor set.

It is anticipated that there may be discrepancy in the indicated stress between jack gauge pressure and elongation. In such event, the load used as indicated by the gauge pressure shall produce a slight overstress rather than understress. When a discrepancy between gauge pressure and elongation of more than 5 percent in tendons over 50 feet (15 meters) long or 7 percent in tendons of 50 feet (15 meters) or less in length occurs, the entire operation shall be carefully checked and the source of error determined and corrected before proceeding further. When provisional ducts are provided for addition of post-tensioning force in the event of an apparent force deficiency in tendons over 50 feet (15 meters) long, the discrepancy between the force indicated by gauge pressure and elongation may be increased to 7 percent before investigation into the source of the error.

In the event that more than two percent of the individual strand wires in a tendon break during the tensioning operation, the tendon shall be removed and replaced (including new set wedges). Previously tensioned strands shall not be allowed unless approved by the Engineer.

Post-tensioning bars used to apply temporary post-tensioning may be reused if they are undamaged.

Post-tensioning steel shall be cut using an abrasive saw within 3/4 inch (20 mm) away from the anchoring device. Flame cutting of post-tensioning steel is not allowed, except for pretensioned post-tensioning steel.

H. Grouting of Tendons.

A. General. After post-tensioning and anchoring of a tendon has been completed and accepted, the annular space between the post-tensioning steel and the duct shall be grouted in accordance with this Specification. In the interval between the post-tensioning and grouting operations, the post-tensioning steel shall be protected as previously specified. Immediately after post-tensioning, all grout vents of each tendon shall be temporarily sealed with plugs to prevent entrance of air or water and left in place until just prior to tendon grouting.

All grouting operations shall be performed by workers trained and experienced in the tasks required. Grouting shall be performed under the immediate control of a grouting foreperson that has experience and skill in grouting. The Contractor shall name (as a minimum) a primary and backup grouting supervisor and shall furnish proof of experience for each for approval by the Engineer. The named grouting supervisors shall be present whenever grouting occurs.

B. Equipment. The grouting equipment shall include a mixer capable of continuous mechanical mixing that will produce a grout free of lumps and undispersed cement, a grout pump, and standby flushing equipment with water supply. The equipment shall be able to pump the mixed grout in a manner that will comply with all requirements.

Accessory equipment that will provide for accurate solid and liquid measures shall be provided to batch all materials.

The pump shall be a positive displacement type and be able to produce an outlet pressure of at least 150 PSI (1.0 MPa). The pump should have seals adequate to prevent introduction of oil, air, or other foreign substance into the grout, and to prevent loss of grout or water.

A pressure gauge having a full-scale reading of no greater than 300 PSI (2.0 MPa) shall be placed at some point in the grout line between the pump outlet and the duct inlet.

The grouting equipment shall contain a screen having clear openings of 0.132 inches (3.35 mm) maximum size to screen the grout prior to its introduction into the grout pump. If a grout with aggregate or a thixotropic additive is used, a screen opening of 0.187 inches (4.75 mm) is satisfactory. This screen shall be easily accessible for inspection and cleaning.

The grouting equipment shall utilize gravity feed to the pump inlet from a hopper attached to and directly over it. The hopper shall be kept at least partially full of grout at all times during the pumping operations to prevent air from being drawn into the post-tensioning duct.

Under normal conditions, the grouting equipment shall be capable of continuously grouting the largest tendon on the project in no more than 20 minutes.

Pipes or other suitable devices shall be provided for injection of grout and to serve as vent holes during grouting. The material for these pipes shall be at least 1/2 inch (13-mm) inside diameter and shall be made of a suitable plastic which will not react with the concrete or enhance corrosion of the post-tensioning steel and is free of water soluble chlorides. These pipes shall be fitted with positive mechanical shut off valves capable of withstanding grouting pressures. All connections between a grout pipe and a duct shall be made with plastic structural fasteners and taped with a waterproof tape as necessary so as to assure a water tight connection.

For all vertical tendons which have strands as the post-tensioning steel, a standpipe shall be provided at the upper end of the tendon to store bleed water and allow it to be reabsorbed by the grout. This device shall be designed so that the level of grout can be brought to an elevation which will assure that bleeding will at no time cause the level of the grout to drop below the highest point of the upper anchorage device. Provision shall be made to assure that bleed water rises into the standpipe, not into the uppermost part of the tendon and anchorage device.

C. Mixing Grout. The sequence for charging the mixer shall be: add water, start mixer, and add cement. When cement and water are reasonably well mixed, admixtures shall be introduced in accordance with written instructions of the manufacturer of each admixture. The mixing procedures shall prevent admixture from getting caught on blades or sides of drum and from forming gel globules. The mixing procedure may be varied in accordance with the written recommendations of the

manufacturer of the admixtures.

The grout shall be mixed until a uniformly blended mixture is obtained and shall be continuously agitated until it is introduced into the group pump. Batches of grout shall be placed within 30 minutes of mixing. No water shall be added to the grout to modify its consistency after the initial mixing operation is completed.

D. Preparation of Ducts. All ducts shall be clean and free of deleterious materials that would impair bonding or interfere with grouting procedures.

Flushing of the ducts with water shall not be allowed unless approved by the Engineer. If flushing is required, the duct shall be dry a minimum of 6 hours prior to the start of grout placement. The ducts shall be dry prior to grouting. If inadvertent water is suspected in the ducts, the ducts shall be blown out with oil-free compressed air until all moisture is removed from the post-tensioning steel and the inside surfaces of the duct.

E. Placing Grout. All grout and high-point vent openings shall be open when grouting starts. Grout shall be allowed to flow from the first vent after the inlet pipe until any entrapped air has been removed and a minimum of one quart (one liter) of grout has exited the vent, at which time the vent should be capped or otherwise closed. Remaining vents shall be closed in sequence in the same manner.

The pumping pressure at the tendon inlet shall not exceed 250 psi.

If the actual grouting pressure exceeds the maximum recommended pumping pressure, grout may be injected at any vent that has been or is ready to be capped, as long as a one-way flow of grout is maintained. If this procedure is used, the vent that is to be used for injection shall be fitted with a positive shutoff.

When one-way flow of grout cannot be maintained, the grout shall be immediately flushed out of the duct with water.

Grout shall be pumped through the duct and continuously wasted at the outlet pipe until no visible slugs of water or air are ejected and the efflux time of the ejected grout, as measured by a flow cone test, if used, is not less than that of the injected grout. To ensure that the tendon remains filled with grout, the outlet shall then be closed and the pumping pressure allowed to build a minimum of 75 psi before the inlet vent is closed. Plugs, caps, or valves thus required shall not be removed or opened until the grout has set.

After the grout has set, pipes used as injection or vent ports shall be cut off. Plastic pipes shall be cut off flush with the surface of the concrete.

F. Temperature Considerations. Grouting shall not occur when air temperatures are below 32°F or concrete temperatures are below 40°F. Ducts shall be kept free of water to avoid damage due to freezing. The temperature of the concrete or air surrounding the tendon shall be maintained at 35°F or above from the time of grouting until the compressive strength of the grout, as determined from tests on 2 inch cubes cured under the same conditions as the in-place grout, exceeds 800 psi.

Under hot weather conditions, grouting shall take place early in the morning when daily temperatures are lowest. The grout temperature shall not be above 85°F during mixing or pumping. If necessary, the mixing water and grout shall be cooled.

G. Field Mock-Up Tests. The Contractor shall perform field mock-up tests of grout procedures. Field trial tests shall be conducted at the same time as the field mock-up tests.

Field mock-up tests shall be scheduled in advance of production grouting. At least four weeks before scheduled start of field mock-up tests, the Contractor shall submit to the Engineer for approval a detailed written field mock-up test plan covering test setup, materials, ducts, inlets, outlets, anchorages, post-tensioning element and grouting and dissection procedures. Supervisory personnel and equipment used for the mock-up tests shall be the same as those to be used in production grouting. Changes in supervisory personnel, materials, equipment, and procedures shall be allowed only after a written approval by the Engineer is received. The post-tensioning element(s) shall be used in field mock-up tests and shall be stressed.

Not less than three days after grouting, the Contractor shall dissect the test specimen for a thorough examination of grout, post-tensioning steel and the duct. A report describing the trial test (including any variations from the test plan) and its findings shall be submitted to the Engineer for approval a maximum of two weeks after dissection. The report shall document all voids in the grout with respect to size, location, and any presence of free moisture or corrosion.

The Contractor shall notify the Engineer of the time and location of the mock-up tests and dissection and ensure that the test and dissection are witnessed.

The Engineer shall determine whether the results of the mock-up test satisfy the acceptance requirements in the contract. The acceptance requirements shall, as a minimum, include provisions for bleeding,

settlement, shrinkage, or expansion, flowability, compatibility, completeness of filling, lack of corrosion, and the absence of bleed pockets. If test results do not meet the acceptance requirements, the Engineer may require additional tests at the Contractor's expense.

H. Quality Control Testing of Grouts. A minimum of 45 days prior to grouting, a 5-lb. sample of pre-approved grout shall be submitted for quality control testing according to the tests listed in the table below. If there is fine aggregate in the grout, it shall conform to ASTM C33, and be non-reactive per ASTM C295, C289, and C1260. Additional testing will be performed at the frequencies listed in the following table. Control charts shall be maintained for each test. When one result is outside the requirement, each batch of grout shall be tested until four batches comply. Additionally, a field mock up test will be required 4 weeks prior to grouting, as described above.

Quality Control Testing of Grout

Test	Method	Frequency (min.)	Requirement
Flow	ASTM C 939	5 yd^3 or 1/day	Minimum of 11 seconds
Bleeding	ASTM C 940	5 yd^3 or 1/day	0% after 3 hours
Wick-induced bleeding	ASTM C 940 mod.	5 yd^3 or 1/day	0% after 4 hours
Set time	ASTM C 953	5 yd^3 or 1/day	3 hrs. min.; 12 hrs. max.
Volume change	ASTM C 1090	10 yd^3 or 1/week	0% reduction at 24 hours; 0.3% vol. change at 28 days
Compressive strength	ASTM C 942	5 yd^3 or 1/day	3000 psi at 7 days; 5000 psi at 28 days

* Testing frequency shall be increased until the mix is within the requirement range. If corrections cannot be readily made in the opinion of the Engineer, the grout material shall be rejected.

I. Protection of Post-tension Anchorages. As soon as possible, but not to exceed 14 days after tensioning and grouting is completed, exposed end anchorages, strands, and other metal accessories shall be cleaned of rust, misplaced mortar, grout, and other such materials by abrasive blasting. Immediately following the cleaning operation, the entire surface of the anchorage recess (all metal, and metal to concrete interfaces) shall be uniformly coated with an epoxy meeting the requirements of AASHTO M235 (ASTM C881) Type II or V. The epoxy shall be applied in a manner and thickness as recommended by the manufacturer. While the epoxy is still tacky, the entire anchorage recess shall be filled with a High Performance Mortar or

concrete meeting the requirements of the HIGH PERFORMANCE CONCRETE STRUCTURES portion of this specification. The mortar or concrete shall fill the recess to a clean, neat surface that is flush with the surrounding concrete.

The Contractor shall submit the proposed mix design for High Performance Mortar a minimum of 45 calendar days prior to use for review and approval by the Engineer. The mortar components shall meet all raw material requirements of HIGH PERFORMANCE CONCRETE STRUCTURES. The mortar shall contain cementitious materials and ratios consistent with the HIGH PERFORMANCE CONCRETE STRUCTURES Mix and have a minimum water-to-cement ratio of 0.38 and 28 day compressive strength of 6,000 psi.

Method of Measurement: The quantity of post-tensioning tendons to be paid for under this Section shall be the computed weight, in pounds, of permanent post-tensioning steel entering into the completed structure and accepted by the Engineer. Measurement shall be the theoretical plan length measured from the workpoints shown on the plans with no allowance made for waste or extension past the workpoints. No measurement will be made for temporary post-tensioning which shall be considered included with the work described herein. Additionally, no measurement will be made for anchorage hardware.

For quantitative determination, the following unit weights will be used:

Post-tensioning System	Weight per Unit Length
0.5 inch Φ seven-wire strand	0.52 lb/ft
0.6 inch Φ seven-wire strand	0.74 lb/ft

Basis of Payment: The contract unit price per pound for FURNISHING, INSTALLING AND STRESSING POST-TENSIONING STRANDS will include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing, placing and tensioning the post-tensioning steel in concrete structures, complete in place, as specified in the contract documents and in these specifications and as directed by the Engineer.

Full compensation for furnishing and placing additional concrete and deformed bar reinforcing steel required by the particular system used; ducts, anchoring devices, distribution plates, or assemblies and incidental parts; for furnishing samples for testing, working drawings, and for pressure-grouting ducts shall be considered as included in the contract unit price paid and no additional compensation will be allowed therefore.

RUSTICATION FINISH TYPE I (SPECIAL)
RUSTICATION FINISH TYPE II (SPECIAL)

DESCRIPTION: This work shall consist of furnishing and installing form-liners in the concrete formwork as shown on the plans and as specified herein for concrete finishes indicated as "Rustication Finish Type I" or "Rustication Finish Type II". All concrete structures including those that include Rustication Finish Type I and Type II shall follow the applicable portions of Section 503 of the Standard Specifications.

MATERIALS:

Form Liner: Form liner to be made from high-strength material, suitable for multiple uses, and be designed to hide liner joints and pattern repeat. Form liners shall be capable of withstanding anticipated concrete pour pressures without causing leakage or causing physical defects or apparent deformation. Form liners shall attach easily to pour-in-place forms and be removable without causing concrete surface damage or weakness in the substrate.

Manufacturers:

Milestones Incorporated 235 Monroe Street Hudson, Wisconsin	Contact: Paul Nasvik, President Phone: (715) 381-9660 Fax: (715) 381-9679
Custom Rock International 1156 Homer Street St. Paul, MN 55116	Phone: (800) 637.2447 Fax: (651) 699.1830
Scott Systems 1788 Helena St. Aurora CO 80011	Phone: (303) 341-1400
Increte Systems 1611 Gunn Highway Odessa, FL 33556	Phone: (800) 752-4626

Surface Applied Stain: A surface applied stain shall be applied to all form lined surfaces or as directed by the engineer. The contractor shall submit material specifications, samples and staining procedures to the Engineer for approval. The surface applied stain shall resemble native Batavia Limestone in color and shall be variegated to approximate natural stone. The stain shall consist of water-borne acrylic stain or acid-etching stain subject to the approval of the Engineer. All form-lined surfaces shall be sealed after application of the stain. The type of sealer shall be as recommended by the stain manufacturer.

Form release agents shall be non-staining, non-residual, non-reactive and shall not contribute to the degradation of the form liner material.

CONSTRUCTION:

Procedures Submittal: The Contractor shall submit written construction procedures, approved in writing by the form liner manufacturer, for the rustication finishes on the outside face of the elements indicated on the plans. The Contractor's method of obtaining the surface texture specified on the plans shall be subject to approval by the Engineer.

Shop Drawing Submittals: The Contractor shall submit Shop drawings of the concrete facing patterns including liner layouts to achieve each area of textured concrete. Shop drawing submittals shall include:

- Elevation views and details showing the overall patterns for each texture.
- Individual form liner panel designs, patterns, gang panel layouts and corner treatment details.
- Pattern descriptions, dimensions, and sequencing of form liner sections.

Mockups: Upon approval of the construction procedures by the Engineer, the Contractor shall cast mockups at a location directed by the Engineer. Mockups to be of size and shape indicated on the plans and to include a corner section. After removal of the formwork and staining/sealing, the Engineer will examine the Mockups and instruct the Contractor if the rustication finish is acceptable or if additional Mockups are necessary. If necessary, the Contractor shall pour additional Mockups at locations designated by the Engineer until Mockups meet with the Engineer's approval. The approved Mockups shall be removed only after direction from Engineer. The rustication finish of all subsequently installed wall sections shall match the approved Mockups. All deviations from the approved rustication finishes shall be repaired by the Contractor to the satisfaction of the Engineer at no additional cost to the contract.

The Contractor shall notify the Engineer at least 40 hours prior to placing concrete. Concrete shall not be placed until the Engineer has inspected the formwork and the placement of reinforcing bars for compliance with the plans.

Form liners shall be installed to comply with manufacturers' recommendations to achieve the highest quality concrete appearance possible. Form liners shall withstand resulting concrete placement pressures without leakage causing physical or visual defects. After each use, liners shall be cleaned and made free of build-up prior to each placement, and visually inspected for blemishes or tears. Repair liners if necessary in accordance with the manufacturer's recommendations. Apply a form release agent to all surfaces of the liner to contact concrete as per manufacturer's recommendations.

Attach liners to each other with flush seams. Treat or fill seams as necessary to eliminate visible evidence in cast concrete. Securely attach the liner to the forms according to the manufacturer's recommendations. Blend liner butt joints into the pattern so as to create no visible vertical or horizontal seams or conspicuous form butt joint marks. Liner joints must fall within pattern joints or reveals. Finished textures shall be continuous without visual disruption or repetition. Confirm proper alignment of patterns over adjacent and multiple liner panels and around corners.

Corners shall be treated to maintain the appearance of full stones from both sides. Liners shall be mitred to maintain stone continuity around corners and double batter profile.

Use continuous or single liner panels where liner joint may interrupt intended pattern. Do not piece together panel remnants. Establish an on-site inventory of each panel type based on the final form-liner drawings and anticipated useful life for each form liner type. Prior to construction, ensure that an adequate number of each type of panel is available to complete the project.

All form liner panels that will not perform as intended or are no longer repairable shall be replaced.

The Contractor shall coordinate concrete pours to prevent visible differences between individual pours or batches. Concrete pours shall be continuous between construction or expansion joints. Do not allow cold joints to occur within continuous form liner pattern fields. Coordinate the placement of wall ties with the liner and form to achieve the least visible result. Strip liners between 12 and 24 hours as recommended by the manufacturer. Coordinate required curing methods with desired aesthetic result. Do not use curing compounds. Comply with all other requirements of Article 1020.13 of the standard specifications. Coordinate concrete slump requirements with form liner manufacturers' requirements for optimizing the concrete finish.

The Contractor shall employ proper consolidation methods to ensure the highest quality finish. Internal vibration shall be achieved with a vibrator of appropriate size, the highest frequency and low to moderate amplitude. Concrete placement shall be in lifts not to exceed 450 mm. Internal vibrator operation shall be at appropriate intervals and depths and withdrawn slowly enough to assure the minimum amount of surface air voids and the best possible finish without causing segregation. External form vibrators may be required to assure the proper results. The use of external form vibrators must be approved by the form liner manufacturer. It is the intention of this specification that no rubbing of flat areas or other repairs shall be required after form removal. Finish all exposed formed concrete surfaces so that vertical seams, horizontal seams, and butt joint marks are not visible. Minimize grinding and chipping to avoid exposing aggregate.

METHOD OF MEASUREMENT:

The completed RUSTICATION FINISH TYPE I or RUSTICATION FINISH TYPE II will be measured in square feet along the face of the finished surface, which outline plane area.

BASIS OF PAYMENT:

The rustication finish, measured as specified, will be paid for at the contract unit price per square foot for RUSTICATION FINISH TYPE I, or RUSTICATION FINISH TYPE II. These prices shall be payment in full for all labor, materials, equipment, and manufacturer's technical support required for formwork preparation and form liner installation.

BRIDGE RAILING (SPECIAL)
OUTLOOK RAILING (SPECIAL)

DESCRIPTION: This work shall consist of furnishing and installing bridge railing and outlook railing as shown on the plans and as specified herein. The bridge rail system will be comprised of steel tube rails and posts with steel bar pickets. The outlook railing system will be comprised of cast iron posts, stainless steel bases and steel tube rails with steel bar pickets.

MATERIALS:

(a) Structural steel shapes and plates AASHTO M270 (ASTM A709), Grade 36 or 50.
(b) Fasteners: ASTM A307 and galvanized unless shown otherwise on the Plans.
(c) Steel anchor bolts ASTM F1554, Grade 36, 55 or 105, where specified on the Plans and per Standard Specification 1006.09. Galvanized per AASTHO M232.
(d) Hollow structural steel sections ASTM A500, Grade B
(e) Weld: Comply with operator testing requirements and filler metal requirements of the Standard Specifications and AWS.
(f) Grout: Non-shrink grout per Section 1024 of the Standard Specifications.
(g) Ductile Cast Iron for Posts ASTM A536-84 Gr. 60-40-18 or Gr. 65-45-12.
(h) Stainless Steel for Cast Iron Post Bases: Type 316

CONSTRUCTION:

(a) Steel railings will be fabricated in units and given all coats of the paint system in the shop. Painting will be in accordance with Section 506 of the Standard Specifications and Guide Bridge Special Provision CLEANING AND PAINTING NEW METAL STRUCTURES. Either Organic Zinc-Rich/Epoxy/Urethane or Aluminum Epoxy Mastic/Waterborne Acrylic paint system may be used. All coats of paint must be supplied by the same paint manufacturer. Touch-up of damaged paint including fasteners and field welds will be in accordance with this provision and the paint system selected.
Color: Prior to coating, submit color samples for approval by Engineer.
Color to match light poles – Dark Bronze

(b) Railings will follow a true line through all posts and pre-cast concrete dies parallel with the bridge.

(c) Vertical elements will be perpendicular to a true plane and horizontal elements of the rail will follow the profile grade line as noted on the Plans.

(d) Railing installation will require staged installation and coordinated with the architectural pre-cast concrete dies, concrete bollards and architectural pre-cast concrete curbs.

METHOD OF MEASUREMENT: This work will be measured for payment in place, in feet, along the centerline of the rail from face-to-face of pre-cast concrete die, from face of pre-cast concrete die to centerline of post (steel or cast iron), center-to-center of post (steel or cast iron) or to the outside face of end posts or the outside end of railing section.

BASIS OF PAYMENT: The bridge rail or the outlook railing system, measured as specified, will be paid for at the contract unit price per foot for BRIDGE RAILING or OUTLOOK

RAILING, respectively. The price shall be payment in full for all labor, materials and equipment required for the fabrication, coating and complete installation

STAIR RAILING (SPECIAL)
RIVERWALK RAILING (SPECIAL)

DESCRIPTION: This work consists of furnishing all labor, materials, tools, and equipment required to design, furnish and install STAIR RAILING and RIVERWALK RAILING as shown in the Plans and as directed by the Engineer.

This work must be performed in accordance with Sections 505, 506, 509 and 584 of the Standard Specifications and as directed by the Engineer.

PERFORMANCE REQUIREMENTS:

A. Design loads for the structural design and construction of the below listed fabrications are to satisfy applicable codes, but are to not be less than the minimum values specified herein.

B. Handrails, Railings and Guardrails Construction:

1. Handrails: Design handrails and their anchors capable of withstanding a concentrated load of 200 pounds at any point in any direction on the handrail, also a uniform load of 50 pounds per lineal foot applied simultaneously in both vertical and horizontal directions.
2. Railings and Guardrails: Design railings and guardrails and their anchors capable of withstanding a concentrated load of 200 pounds applied at any point in any direction along the top railing member, also a uniform load of 50 pounds per lineal foot applied horizontally at the required railing or guardrail height and a simultaneous uniform load of 100 pounds per lineal foot applied vertically downward at the top of the railing or guardrail.
3. Design and fabricate stair and railings, handrails and guardrails in accordance with ASTM E985 – Specification for Permanent Metal Railing Systems and Rails for Buildings.
4. When conflicts exist between the above specified load requirements and the specified standard, provide fabrications designed to the more stringent or greater requirement.

SUBMITTALS:

A. Submit the following:

1. Manufacturer's Literature: Material description and application or installation instructions for products specified, including manufactured anchors, grout and shop coat paint.
2. Design Calculations: Provide for fabricated items requiring design calculations to substantiate design and installation conditions, prepare, sealed and signed by a Structural Engineer licensed in the State of Illinois. Submit design calculations for the following:
   a. Handrails, Railings and Guardrails.
3. Shop Drawings:
   a. Layout and details of each fabricated metal item shown on the Plans

and specified herein.

b. Indicate all dimensions, slopes, gages and finishes of metals, sizes, types and spacing of welds, fasteners and anchors.

SUBMITTALS - MOCK UPS: Provide full scale mock up which shows each connection shape, material and element. Mock up should be fabricated with all elements tensioned to design tolerances and stresses. Re-fabricate mock up as directed by the Engineer to achieve the design intent. The contractor may use mock up in the final construction with approval of the Engineer.

MATERIALS:

STEEL

All steel shapes, plates, and bars must conform to the requirements of AASHTO M270 (ASTM A709) Grade 50.

FASTENERS

Stainless-Steel Components: Type 316 stainless-steel fasteners.

Uncoated Steel Components: Plated-steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating where concealed; Type 304 stainless-steel fasteners where exposed.

Galvanized Steel Components: Plated-steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.

Dissimilar Metals: Type 316 stainless-steel fasteners.

Fasteners for Anchoring Railings to other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

Grout for anchoring railings: Non-metallic, Non expanding, Non-shrink, Non-staining grout per Section 1024 of the Standard Specifications. Grout material to be free of gypsum.

METAL FINISHES:

Prime and Paint steel and iron railing components and surfaces. Comply with Section 506 of the Standard Specifications, as directed here, and as directed by Engineer.
Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying finishes. Prepare surfaces prior to the application of each coat in compliance with coating manufacturers requirements for maximum performance. Touch-up of damaged paint including fasteners and field welds will be in accordance with this provision and the paint system selected.

Shop applied, 3 coat finish system:

Organic Zinc-Rich Prime Coat:	3 to 5 mils dry film thickness
Epoxy Intermediate Coat:	5 to 7 mils dry film thickness
Aliphatic Urethane Top Coat:	2.5 to 4 mils dry film thickness

Color: Prior to coating, submit color samples for approval by Engineer.
Color to match light poles – Dark Bronze

FABRICATION AND ERECTION:

The Contractor must detail the new steel railing to be consistent with the details shown on the plans or as directed by the Engineer. The Contractor will be solely responsible for the detailing and is not to be paid extra for any field adjustments required to accomplish proper railing installation.

Coordinate assembly and alignment of steel, Architectural Pre-cast and Cast-in-place concrete components, adjacent construction including pre-cast and cast-in-place concrete, and paving systems to achieve true, plumb and aligned railing systems.

Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

Form work true to line and level with accurate angles and surfaces.

Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. Remove flux immediately. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

Provide inserts and other anchorage devices for connecting railings to concrete work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.

Welding: Field welds other than those shown on the Plans are prohibited unless specifically authorized by the Engineer. All welding must be performed in accordance with the applicable provisions of the latest ANSI/AASHTO/AWS D1.5 Bridge Welding Code as modified by Article 505.04(q) of the Standard Specifications. Only certified welders will be used to perform the required welding.

METHOD OF MEASUREMENT: This work will be measured for payment in feet of STAIR RAILING or RIVERWALK RAILING that is acceptably installed within the limits shown on the Plans or as directed by the Engineer. The length paid for will be the overall length measured along the top longitudinal railing member through all posts and gaps. No separate measurement will be made for handrails included as part of STAIR RAILING. The single line handrail, post mounted or wall bracket mounted, at NORTHWEST STAIR will not be measured for payment but will be considered incidental to STAIR RAILING.

BASIS OF PAYMENT: This work will be paid for at the contract unit price per foot for STAIR RAILING or RIVERWALK RAILING measured as specified, which price will be payment in full for all labor, materials, fabrication, transportation, erection, tools, and all other appurtenant work necessary to complete this item.

REMOVE, STORE AND REINSTALL EXISTING MONUMENT (SPECIAL)

DESCRIPTION. This work consists of furnishing all labor, materials, tools, and equipment required to remove the existing granite monument ("Donovan Memorial Bridge" located at the northwest corner of the existing bridge) storage and reinstallation as indicated in the plans and as directed by the Engineer.

CONSTRUCTION.
Removal, transportation, storage and reinstallation of the monument shall not result in any damage to the granite. Store monument in a secure, sheltered, well ventilated and dry location. Store monument with adequate support and bracing and protect monument to prevent contact with soil, to prevent staining, and to prevent cracking, distortion, or other physical damage. Do not use straps, shims, skids, etc. made from materials which may cause staining. Do not allow coverings to trap water or promote organic growth. Support units during shipment on non-staining shock-absorbing material.

Prior to removal of monument, submit storage method and location information to Engineer for approval. Grant access to stored monument as requested by Engineer throughout contract duration.

Preparation of monument for new mounting detail shall not result in damage to stone.
Set monument plumb and level in accordance with the drawings.

METHOD OF MEASUREMENT. REMOVE STORE AND REINSTALL EXISTING MONUMENT will not be measured for payment.

BASIS OF PAYMENT. This work will be paid for at the contract lump sum price for REMOVE STORE AND REINSTALL EXISTING MONUMENT, which price will include all costs for labor, materials, tools, equipment, excavation, and incidental items as specified or required to complete this item.

NORTHWEST STAIR (SPECIAL)

DESCRIPTION.

A. This section provides reference information for all labor, equipment, tools, and materials, including fabrication, required to furnish and install components of the NORTHWEST STAIR (SPECIAL) as shown in the plans and as directed by the Engineer. This section includes reference information for:
   1. Cast-in-place structure concrete.
   2. Reinforcement bars, epoxy coated.
   3. Rubbed finish.
   4. Architectural pre-cast concrete wall coping.
   5. Single line metal handrail.
   6. Stair non-abrasive bars.

MATERIALS.

A. Cast-in-place concrete for the stair slab with integral treads will be per Specification Section 503 of the Standard Specifications and Item CONCRETE STRUCTURES.
B. Reinforcement bars, epoxy coated for cast-in-place concrete will be per Specification Section 508 of the Standard Specification and Item REINFORCEMENT, EPOXY COATED.
C. The rubbed finish of exposed cast-in-place concrete must meet the requirements of Section 503.16 (b) of the Standard Specifications and Item RUBBED FINISH.
D. The pre-cast concrete coping indicated on the Plans at the top of the perimeter wall of the stair and top landing will be per ARCHITECTURAL PRE-CAST CONCRETE and ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL)
E. Single line metal handrail mounted to metal brackets with anchors or metal posts with sleeves, non-shrink grout and waterproof mortar along the stair will be per STAIR RAILING (SPECIAL).
F. Non-slip abrasive bars. The bars are to match those specified in ARCHITECTURAL PRE-CAST CONCRETE – SOUTHWEST STAIR SYSTEM (SPECIAL) and as shown on the Plans.

INSTALLATION. The installation of items included in this reference specification will be in compliance with the respective Sections of the Standard Specifications or the Special Specifications contained herein.

MEASUREMENT. The cast-in-place stair slab with integral treads will be measured by the cubic yard; the reinforcement bars, epoxy coated will be measured by the pound as computed for the sizes and lengths of bars shown on the Plans. The rubbed finish at exposed portions of concrete structures about the stairwell will be measured for payment by the square foot. The furnishing and installing of non-slip abrasive bars at each tread and landing area at NORTHWEST STAIR (SPECIAL) as shown on the Plans will not be measured for payment but will be considered incidental to CONCRETE STUCTURES. The pre-cast coping at the foundation wall at NORTHWEST STAIR (SPECIAL) will not be measured for payment but will be incidental to ARCHITECTURAL PRE-CAST CURB – BRIDGE CURB (SPECIAL). The guardrail at the top landing with pickets will be measured for payment by the foot per STAIR

RAILING (SPECIAL). The NORTHWEST STAIR (SPECIAL) single line rail along the stair, post mounted or wall mounted, will not be measured for payment but will be considered incidental to STAIR RAILING (SPECIAL).

PAYMENT. The work under this reference specification will be paid for as follows: At the unit price per cubic yard for CONCRETE STRUCTURES per the Standard Specifications. At the unit price per pound for REINFORCEMENT, EPOXY COATED per the Standard Specifications. At the unit price per square foot for RUBBED FINISH per the Standard Specifications. Items of work described herein which will not be paid for separately but will be considered incidental to the referenced items are: The architectural pre-cast concrete coping will be incidental to the price per foot for ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL). The single line metal handrail will be incidental to the price per foot for STAIR RAILING (SPECIAL). The non-abrasive bars will be incidental to the lump sum price for ARCHITECTURAL PRE-CAST CONCRETE – SOUTHWEST STAIR SYSTEM (SPECIAL).

ARCHITECTURAL PRE-CAST CONCRETE (SPECIAL)

DESCRIPTION

This section provides reference information for all engineering, labor, materials, fabrication, tools, and equipment required to furnish and install ARCHITECTURAL PRECAST CONCRETE as shown in the Plans and as directed by the Engineer. This section includes reference information for:

Architectural pre-cast concrete Stairs (Southwest, Southeast and Northeast).
Architectural pre-cast concrete units (Bridge Dies, Bridge Curb, Outlook Curb, Outlook Post Bases and Northwest Stair Wall Coping).
Architectural pre-cast Bench Planter.

PERFORMANCE REQUIREMENTS

Structural Performance: Provide architectural pre-cast concrete Stairs and Bench Planter units and connections capable of withstanding the following design loads within limits and under conditions indicated:

Loads: As indicated.
Dead Loads: Self-weight and superimposed loads where shown on the plans.
Live Loads: Stairs 100 psf.
Superimposed Railing Loads: Reactions from a 50 plf thrust applied simultaneously in the horizontal and vertical direction at the top of the rails.
Wind Loads: As required by AASHTO, local building code or ASCE 7.
Design framing system and connections to maintain clearances at openings, to allow for fabrication and construction tolerances, to accommodate live-load deflection, shrinkage and creep of primary building structure, and other building movements as follows:

Upward and downward movement of 1/2 inch.

Thermal Movements: Provide for in-plane thermal movements resulting from annual ambient temperature changes of plus or minus 70° F from an ambient temperature of 50° F.
Vehicular Impact Loads: Design the roadway side of Bench Planter units acting as vehicular barriers for vehicles in accordance with AASHTO requirements with anchorages or attachments capable of transferring this load to the structure.
Fabrication, transportation, and erection loads.

SUBMITTALS

Product Data: For each type of product indicated.

Design Mixtures: For each pre-cast concrete mixture. Include compressive strength and water-absorption tests.

Shop Drawings: Detail fabrication and installation of architectural pre-cast concrete units. Indicate locations, plans, elevations, dimensions, shapes, and cross sections of each unit. Indicate joints, reveals, and extent and location of each surface finish. Indicate details at corners.

Indicate separate face and backup mixture locations and thicknesses.
Indicate welded connections by AWS standard symbols. Detail loose and cast-in hardware and connections.
Indicate locations, tolerances, and details of anchorage devices to be embedded in or attached to structure or other construction.
Indicate locations, tolerances, and details of lift points and anchorage devices to be embedded in or attached to structure.
Indicate locations, extent, and treatment of dry joints if two-stage casting is proposed.
Include plans and elevations showing unit location and sequence of erection for special conditions.
Design Modifications: If design modifications are proposed to meet performance requirements and field conditions, submit design calculations and Shop Drawings. Do not adversely affect the appearance, durability, or strength of units when modifying details or materials and maintain the general design concept.
For pre-cast concrete Stairs: Comprehensive engineering analysis signed and sealed by the qualified professional engineer responsible for its preparation. Show governing unit types, connections, and types of reinforcement, including special reinforcement. Indicate location, type, magnitude, and direction of loads imposed on the bridge and foundation structures from architectural pre-cast concrete.

Samples: For each type of finish indicated on exposed surfaces of architectural pre-cast concrete units, in sets of 3, illustrating the full range of finish, color, and texture variations expected; approximately 12 by 12 by 2 inches thick.

When other faces of pre-cast concrete unit are exposed, include Samples illustrating workmanship, color, and texture of backup concrete as well as facing concrete.

Grout Samples for Initial Selection: Color charts consisting of actual sections of grout showing manufacturer's full range of colors.

Grout Samples for Verification: Showing color and texture of joint treatment.

Welding operator and electrode certificates.

Qualification Data: For Installer, fabricator, testing agency.

Material Test Reports: For aggregates.

Material Certificates: For the following items, signed by manufacturers:

Cementitious materials.
Reinforcing materials and pre-stressing tendons.
Admixtures.
Bearing pads.
Structural-steel shapes and hollow structural sections.

Mockups: See following section.

QUALITY ASSURANCE

Installer Qualifications: An experienced installer who has completed precast concrete installation work similar to this project and whose work has resulted in construction with a record of successful in-service performance.

Fabricator Qualifications: A firm that assumes responsibility for engineering architectural pre-cast concrete units to comply with performance requirements. This responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.

Participates in PCI's plant certification program and is designated a PCI-certified plant for Group A, Category A1 - Architectural Cladding and Load Bearing Units or participates in APA's Plant Certification Program for Production of Architectural Precast Concrete Products" and is designated an APA-certified plant.

Has sufficient production capacity to produce required units without delaying the Work.

Is registered with and approved by authorities having jurisdiction.

Design Standards: Comply with ACI 318 and design recommendations of PCI MNL 120, "PCI Design Handbook – Pre-cast and Pre-stressed Concrete."

Quality-Control Standard: For manufacturing procedures and testing requirements, quality-control recommendations, and dimensional tolerances for types of units required, comply with PCI MNL 117, "Manual for Quality Control for Plants and Production of Architectural Pre-cast Concrete Products."

Sample Panels: After sample approval and before fabricating architectural pre-cast concrete units, produce a minimum of 2 sample panels approximately 16 sq. ft. in area for review by Architect. Incorporate full-scale details of architectural features, finishes, textures, and transitions in sample panels.

Locate panels where indicated or, if not indicated, as directed by Architect.
Damage part of an exposed-face surface for each finish, color, and texture, and demonstrate adequacy of repair techniques proposed for repair of surface blemishes.
After acceptance of repair technique, maintain one sample panel at manufacturer's plant and one at Project site in an undisturbed condition as a standard for judging the completed Work.
Demolish and remove sample panels when directed.

Mockups: After sample panel approval but before production of architectural pre-cast concrete units, construct full-sized mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

Build mockup as indicated on Drawings or as indicated by Engineer including sealants, concrete back-up and architectural pre-cast concrete complete with anchors, connections, flashings, and joint fillers.
Notify Engineer seven days in advance of dates and times when mockups will be constructed.
Obtain Engineer's approval of mockups before starting fabrication.
Damage part of an exposed-face surface for each finish, color, and texture, and demonstrate adequacy of repair techniques proposed for repair of surface blemishes.
Maintain mockups during construction in an undisturbed condition as a standard for judging the completed work.
Demolish and remove mockups when directed.
Approval of mockups does not constitute approval of deviations from the Contract Documents unless such deviations are specifically approved by Architect in writing.

Pre-installation Conference: Conduct conference at Project site to comply with the following requirements:

Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Engineer of scheduled meeting dates and times.

DELIVERY, STORAGE, AND HANDLING

Deliver architectural pre-cast concrete units in such quantities and at such times to limit unloading units temporarily on the ground.

Support units during shipment on non-staining shock-absorbing material.

Store units with adequate dunnage and bracing and protect units to prevent contact with soil, to prevent staining, and to prevent cracking, distortion, warping or other physical damage.

Place stored units so identification marks are clearly visible, and units can be inspected.

Handle and transport units in a position consistent with their shape and design in order to avoid excessive stresses which would cause cracking or damage.

Lift and support units only at designated points shown on Shop Drawings.

SEQUENCING

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

MATERIALS

MANUFACTURERS

Available Fabricators: Subject to compliance with requirements, fabricators offering products that may be incorporated into the Work that are approved by the Engineer.

MOLD MATERIALS

Molds: Rigid, dimensionally stable, non-absorptive material, warp and buckle free, that will provide continuous and true pre-cast concrete surfaces within fabrication tolerances indicated; non-reactive with concrete and suitable for producing required finishes.

Mold-Release Agent: Commercially produced liquid-release agent that will not bond with, stain or adversely affect pre-cast concrete surfaces and will not impair subsequent surface or joint treatments of pre-cast concrete.

Surface Retarder: Chemical set retarder, capable of temporarily delaying final hardening of newly placed concrete mixture to achieve desired finish.

REINFORCING MATERIALS

Epoxy-Coated Reinforcing Bars: ASTM A 615, Grade 60, epoxy coated.

Steel Bar Mats: ASTM A 184, fabricated from ASTM A 615, Grade 60, deformed bars, assembled with clips.

Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from galvanized steel wire into flat sheets.

Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

Supports: Suspend reinforcement from back of mold or use bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place according to PCI MNL 117. Reinforcement supports must not contact exposed to view concrete surfaces.

CONCRETE MATERIALS

Portland Cement: ASTM C 150, Type I or Type III, gray, unless otherwise indicated.

For surfaces exposed to view in finished structure, mix gray with white cement, of same type, brand, and mill source.

Supplementary Cementitious Materials:

Fly Ash: ASTM C 618, Class C or F, with maximum loss on ignition of 3 percent.
Metakaolin Admixture: ASTM C 618, Class N.
Silica Fume Admixture: ASTM C 1240, with optional chemical and physical requirement.
Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

Normal-Weight Aggregates: Except as modified by PCI MNL 117, ASTM C 33, with coarse aggregates complying with Class 5S. Stockpile fine and coarse aggregates for each type of exposed finish from a single source (pit or quarry) for Project.

Face-Mixture-Coarse Aggregates: Selected, hard, and durable; free of material that reacts with cement or causes staining; to match selected finish sample.

Gradation: Gap graded.

Face-Mixture-Fine Aggregates: Selected, natural or manufactured sand of same material as coarse aggregate, unless otherwise approved by Engineer.

Lightweight Aggregates: Except as modified by PCI MNL 117, ASTM C 330, with absorption less than 11 percent.

Coloring Admixture: ASTM C 979, synthetic or natural mineral-oxide pigments or colored water-reducing admixtures, temperature stable, and non-fading.

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.

Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.

Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and to not contain calcium chloride or more than 0.15 percent chloride ions or other salts by weight of admixture.

Water-Reducing Admixtures: ASTM C 494, Type A.
Retarding Admixture: ASTM C 494, Type B.
Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.
High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
High-Range, Water-Reducing and Retarding Admixture: ASTM C 494, Type G.
Plasticizing and Retarding Admixture: ASTM C 1017.

STAINLESS-STEEL CONNECTION MATERIALS

Stainless-Steel Plate: ASTM A 666, Type 304, of grade suitable for application.

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.

Lubricate threaded parts of stainless-steel bolts with an anti-seize thread lubricant during assembly.

Stainless-Steel-Headed Studs: ASTM A 276, with minimum mechanical properties of PCI MNL 117, Table 3.2.3.

BEARING PADS

Provide one of the following bearing pads for architectural pre-cast concrete units:

Elastomeric Pads: AASHTO M 251, plain, vulcanized, 100 percent polychloroprene (neoprene) elastomer, molded to size or cut from a molded sheet, Type A durometer hardness of 50 to 70, ASTM D 2240, minimum tensile strength 2250 psi, ASTM D 412.
Random-Oriented, Fiber-Reinforced Elastomeric Pads: Preformed, randomly oriented synthetic fibers set in elastomer. Type A durometer hardness of 70 to 90, ASTM D 2240; capable of supporting a compressive stress of 3000 psi with no cracking, splitting, or delaminating in the internal portions of pad. Test one specimen for every 200 pads used in Project.
Cotton-Duck-Fabric-Reinforced Elastomeric Pads: Preformed, horizontally layered cotton-duck fabric bonded to an elastomer; Type A durometer hardness of 80 to 100, ASTM D 2240; complying with AASHTO's "AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications", Division II, Section 18.10.2, or with MIL-C-882E.
Frictionless Pads: Tetrafluoroethylene (Teflon), glass-fiber reinforced, bonded to stainless or mild-steel plate, of type required for in-service stress.
High-Density Plastic: Multimonomer, nonleaching, plastic strip.

ACCESSORIES

Cast-In-Place Metal Reglets: Provide reglets cast-in-place to receive and accommodate planter membrane flashing system indicated. Provide type 304, .02-inch thick stainless steel reglets by one of the following:

Fry Reglet Corp.
Cheney Flashing Co.
Other, Engineer approved equal.

Pre-cast Accessories: Provide clips, hangers, plastic or steel shims, and other accessories required to install architectural pre-cast concrete units.

Non-Slip abrasive stair nosing: Provide system AS-2 by Balco, Inc. or other, Engineer approved equal.

Stair landing expansion joint system: As shown on the Plans.

Bench Planter accessories:

Planter waterproofing membrane system as outlined in Section 1061 of the IDOT Standard Specifications.
Planter drain assembly as shown on the plans or as approved by Engineer.
Step Lights U.L. listed for exterior wet locations, 120/277v, electronic ballast, 1 watt or 3 watt LumiLed Luxeon warm white diodes with a precision 18deg. beam angle and tilted at 45deg. angle to project through the die cast louver, Marine grade die cast aluminum housing and 316 stainless steel louvered faceplate (6" x 2 7/8"), neoprene continuous closed cell "o" ring gasket, stainless steel tamper resistant hex screws, 1/8" thick tempered glass lens, as approved by Engineer. Finish color as approved by Engineer.
Electrical boxes, conduit, etc. as indicated in the electrical drawings.

SEALANT MATERIALS

Joint sealants formulated for use and locations shown on plans. Follow manufacturers recommendations for substrate preparation and application of sealants.

GROUT MATERIALS

Non-shrink, Non-expanding, Non-staining Grout: Comply with requirements specified in Section 1024.01 of the Standard Specifications.

CONCRETE MIXTURES

General: Provide Class PC in compliance with Section 1020 of the Standard Specifications.

Prepare design mixtures for each type of pre-cast concrete required.

Limit use of fly ash and silica fume to 20 percent of portland cement by weight; limit metakaolin and silica fume to 10 percent of portland cement by weight.

Design mixtures may be prepared by a qualified independent testing agency or by qualified pre-cast plant personnel at architectural pre-cast concrete fabricator's option.

Limit water-soluble chloride ions to maximum percentage by weight of cement permitted by ACI 318 or PCI MNL 117 when tested according to ASTM C 1218.

Normal-Weight Concrete Mixtures: Proportion by either laboratory trial batch or field test data methods according to ACI 211.1, with materials to be used on Project, to provide normal-weight concrete with the following properties:

Compressive Strength (28 Days): 5000 psi minimum.
Maximum Water-Cementitious Materials Ratio: 0.45.

Water Absorption: 6 percent by weight or 14 percent by volume, tested according to PCI MNL 117.

Lightweight Concrete Backup Mixtures: Proportion mixtures by either laboratory trial batch or field test data methods according to ACI 211.2, with materials to be used on Project, to provide lightweight concrete with the following properties:

Compressive Strength (28 Days): 5000 psi.
Unit Weight: Calculated equilibrium unit weight of 115 lb/cu. ft., plus or minus 3 lb/cu. ft., according to ASTM C 567.

Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content complying with PCI MNL 117.

When included in design mixtures, add other admixtures to concrete mixtures according to manufacturer's written instructions.

MOLD FABRICATION

Molds: Accurately construct molds, mortar tight, of sufficient strength to withstand pressures due to concrete-placement operations and temperature changes and for pre-stressing and de-tensioning operations. Coat contact surfaces of molds with release agent before reinforcement is placed. Avoid contamination of reinforcement and pre-stressing tendons by release agent.

Place form liners accurately to provide finished surface texture indicated. Provide solid backing and supports to maintain stability of liners during concrete placement. Coat form liner with form-release agent.

Maintain molds to provide completed architectural pre-cast concrete units of shapes, lines, and dimensions indicated, within fabrication tolerances specified.

Form joints are not permitted on faces exposed to view in the finished work.
Edge and Corner Treatment: Uniformly chamfered ½" unless noted otherwise on the Plans.

FABRICATION

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 pre-casting operations. Locate anchorage hardware where it does not affect position of main reinforcement or concrete placement.

Weld-headed studs and deformed bar anchors used for anchorage according to AWS D1.1 and AWS C5.4, "Recommended Practices for Stud Welding."

Furnish loose hardware items including steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes for securing architectural pre-cast concrete units to supporting and adjacent construction.

Cast-in reglets, slots, holes, and other accessories in architectural pre-cast concrete units as indicated on the Plans.

Cast-in openings larger than 10 inches in any dimension. Do not drill or cut openings or pre-stressing strand without Architect's approval.

Reinforcement: Comply with recommendations in PCI MNL 117 for fabricating, placing, and supporting reinforcement.

Clean reinforcement of loose rust and mill scale, earth, and other materials that reduce or destroy the bond with concrete. When damage to epoxy-coated reinforcing exceeds limits specified in ASTM A 775, repair with patching material compatible with coating material and epoxy coat bar ends after cutting.
Accurately position, support, and secure reinforcement against displacement during concrete-placement and consolidation operations. Completely conceal support devices to prevent exposure on finished surfaces.
Place reinforcement to maintain at least 1.5-inch minimum coverage. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position while placing concrete. Direct wire tie ends away from finished, exposed concrete surfaces.
Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh spacing and wire tie laps, where required by design. Offset laps of adjoining widths to prevent continuous laps in either direction.

Reinforce architectural pre-cast concrete units to resist handling, transportation, and erection stresses.

Comply with requirements in PCI MNL 117 and requirements in this Section for measuring, mixing, transporting, and placing concrete. After concrete batching, no additional water may be added.

Place face mixture to a minimum thickness after consolidation of the greater of 1-inch or 1.5 times the maximum aggregate size, but not less than the minimum reinforcing cover specified.

Place concrete in a continuous operation to prevent seams or planes of weakness from forming in pre-cast concrete units.

Place backup concrete mixture to ensure bond with face-mixture concrete.

Thoroughly consolidate placed concrete by internal and external vibration without dislocating or damaging reinforcement and built-in items, and minimize pour lines, honeycombing, or entrapped air on surfaces. Use equipment and procedures complying with PCI MNL 117.

Place self-consolidating concrete without vibration according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Pre-cast/Pre-stressed Concrete Institute Member Plants."

Comply with PCI MNL 117 for hot- and cold-weather concrete placement.

Identify pickup points of architectural pre-cast concrete units and orientation in structure with permanent markings, complying with markings indicated on Shop Drawings. Imprint or permanently mark casting date on each architectural pre-cast concrete unit on a surface that will not show in finished structure.

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. Cure units until compressive strength is high enough to ensure that stripping does not have an effect on performance or appearance of final product.

Discard and replace architectural pre-cast concrete units that do not comply with requirements, including structural, manufacturing tolerance, and appearance, unless repairs meet requirements in PCI MNL 117 and Architect's approval.

FABRICATION TOLERANCES

Fabricate architectural pre-cast 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

Panel faces shall be free of joint marks, grain, and other obvious defects. Corners, including false joints shall be uniform, straight, and sharp. Finish exposed-face surfaces of architectural pre-cast concrete units to match approved mockups and as follows:

Light Acid-Etched Finish: Use acid and hot-water solution, equipment, application techniques, and cleaning procedures to expose aggregate and surrounding matrix surfaces. Protect hardware, connections, and insulation from acid attack.

Design Reference Sample provided by Engineer.

Finish exposed top, bottom, and back surfaces of architectural pre-cast concrete units to match face-surface finish.

Finish unexposed surfaces of architectural pre-cast concrete units by float finish.

SOURCE QUALITY CONTROL

Quality-Control Testing: Test and inspect pre-cast concrete according to PCI MNL 117 requirements. If using self-consolidating concrete, also test and inspect according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Pre-cast/Pre-stressed Concrete Institute Member Plants."

Strength of pre-cast concrete units will be considered deficient if units fail to comply with ACI 318 requirements for concrete strength.

Testing: If there is evidence that strength of pre-cast concrete units may be deficient or may not comply with ACI 318 requirements, pre-caster will employ an independent testing agency to obtain, prepare, and test cores drilled from hardened concrete to determine compressive strength according to ASTM C 42.

A minimum of three representative cores will be taken from units of suspect strength, from locations directed by Architect.
Cores will be tested in an air-dry condition.
Strength of concrete for each series of 3 cores will be considered satisfactory if average compressive strength is equal to at least 85 percent of 28-day design compressive strength and no single core is less than 75 percent of 28-day design compressive strength.
Test results will be made in writing on same day that tests are performed, with copies to Architect, Contractor, and pre-cast concrete fabricator. Test reports will include the following:

Project identification name and number.
Date when tests were performed.
Name of pre-cast concrete fabricator.
Name of concrete testing agency.
Identification letter, name, and type of pre-cast concrete unit(s) represented by core tests; design compressive strength; type of break; compressive strength at breaks, corrected for length-diameter ratio; and direction of applied load to core in relation to horizontal plane of concrete as placed.

Patching: If core test results are satisfactory and pre-cast concrete units comply with requirements, clean and dampen core holes and solidly fill with pre-cast concrete mixture that has no coarse aggregate, and finish to match adjacent pre-cast concrete surfaces.

Defective Work: Pre-cast architectural concrete units that do not comply with requirements, including strength, manufacturing tolerances, and finishes, are unacceptable. Replace with pre-cast concrete units that comply with requirements.

INSTALLATION

EXAMINATION

Examine supporting structural frame or foundation 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.

Do not install pre-cast concrete units until supporting cast-in-place structural framing has attained minimum allowable design compressive strength.

INSTALLATION

Install clips, hangers, bearing pads, and other accessories required for connecting architectural pre-cast concrete units to supporting members and backup materials.

Erect architectural pre-cast concrete level, plumb, and square. Provide temporary supports and bracing as required to maintain position, stability, and alignment as units are being permanently connected.

Install temporary steel or plastic spacing shims or bearing pads as pre-cast concrete units are being erected. Tack weld steel shims to each other to prevent shims from separating.
Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
Remove projecting lifting devices and grout fill voids within recessed lifting devices flush with surface of adjacent pre-cast surfaces when recess is exposed.

Anchor and connect architectural pre-cast concrete units in position by bolting, welding, grouting, or as otherwise indicated on Shop Drawings. Remove temporary shims, wedges, and spacers as soon as practical after connecting and grouting are completed.

Welding: Comply with applicable AWS D1.1 and AWS D1.4 for welding, welding electrodes, appearance, quality of welds, and methods used in correcting welding work.

Protect architectural pre-cast concrete units and bearing pads from damage by field welding or cutting operations, and provide non-combustible shields as required.
Clean weld-affected metal surfaces with chipping hammer followed by brushing, and apply a minimum 4.0-mil thick coat of galvanized repair paint to galvanized surfaces according to ASTM A 780.

Clean weld-affected metal surfaces with chipping hammer followed by brushing, and re-prime damaged painted surfaces.

At bolted connections, use lock washers, tack welding, or other approved means to prevent loosening of nuts after final adjustment.

Where slotted connections are used, verify bolt position and tightness. For sliding connections, properly secure bolt but allow bolt to move within connection slot. For friction connections, apply specified bolt torque and check 25 percent of bolts at random by calibrated torque wrench.

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. 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.

ERECTION TOLERANCES

Erect architectural pre-cast 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

Repair or remove and replace work that does not comply with specified requirements.

Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

REPAIRS

Repair architectural pre-cast concrete units if permitted by Engineer. The Engineer reserves the right to reject repaired units that do not comply with requirements.

Remove and replace damaged architectural pre-cast concrete units when repairs do not comply with requirements.

CLEANING

Clean mortar, plaster, fireproofing, weld slag, and other deleterious material from concrete surfaces and adjacent materials immediately.

Clean exposed surfaces of pre-cast concrete units after erection and completion of joint treatment to remove weld marks, other markings, dirt, and stains.

Perform cleaning procedures, if necessary, according to pre-cast concrete fabricator's recommendations. Clean soiled pre-cast concrete surfaces with detergent and water, using stiff fiber brushes and sponges, and rinse with clean water. Protect other work from staining or damage due to cleaning operations.
Do not use cleaning materials or processes that could change the appearance of exposed concrete finishes or damage adjacent materials.

MEASUREMENT: ARCHITECTURAL PRECAST CONCRETE will not be measured separately. The cost will be included and measured in the following items: ARCHITECTURAL PRE-CAST CONCRETE – DIES (SPECIAL) will be measured for payment on a per unit basis (each). ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL) will be measured for payment in feet. ARCHITECTURAL PRE-CAST CONCRETE – OUTLOOK CURB (SPECIAL) will be measured for payment in feet. ARCHITECTURAL PRE-CAST CONCRETE POST BASE (SPECIAL) will be measured for payment on a per unit basis (each). For measurement of ARCHITECTURAL PRE-CAST CONCRETE – BENCH PLANTER SYSTEM (SPECIAL), ARCHITECTURAL PRE-CAST CONCRETE – SOUTHWEST STAIR SYSTEM (SPECIAL), ARCHITECTURAL PRE-CAST CONCRETE – SOUTHEAST STAIR SYSTEM (SPECIAL) and ARCHITECTURAL PRE-CAST CONCRETE – NORTHEAST STAIR SYSTEM (SPECIAL), refer to the respective specification. The architectural pre-cast concrete coping at the NORTHWEST STAIR will not be measured for payment but will be considered incidental to the unit price bid for ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL).

PAYMENT: ARCHITECTURAL PRE-CAST CONCRETE will not be paid for separately but will be included and paid for in the following items: The work will be paid for at the contract price per each for ARCHITECTURAL PRE-CAST CONCRETE – DIES (SPECIAL), per foot for ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL), per foot for ARCHITECTURAL PRE-CAST CONCRETE OUTLOOK CURB (SPECIAL), per each for ARCHITECTURAL PRE-CAST CONCRETE POST BASE (SPECIAL), all measured as specified, which prices will include payment for all work, including, but not limited to, the costs of furnishing, drilling and installing dowels, mortar, grout and sealants as required.

ARCHITECTURAL PRE-CAST CONCRETE – DIES (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE – OUTLOOK CURB (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE – POST BASE (SPECIAL)

DESCRIPTION:

The work under this item shall consist of providing all the labor and operations, tools, equipment, materials and incidental items necessary to furnish, deliver and install architectural pre-cast concrete as shown in the Plans and as specified herein for:

1. ARCHITECTURAL PRE-CAST CONCRETE – DIES (SPECIAL)
2. ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL)

3. ARCHITECTURAL PRE-CAST CONCRETE – OUTLOOK CURB (SPECIAL)
4. ARCHITECTURAL PRE-CAST CONCRETE – POST BASE (SPECIAL)

MATERIAL:

ARCHITECTURAL PRECAST CONCRETE
Provide pre-cast concrete engineering, fabrication and installation conforming to the requirements indicated in specification section ARCHITECTURAL PRE-CAST CONCRETE. Provide miscellaneous, related components as indicated.

FABRICATION AND ERECTION: The Contractor must detail each component of the dies, bridge curbs, outlook curbs and coping consistent with the details shown on the plans or as directed by the Engineer. The Contractor will be solely responsible for the detailing and is not to be paid extra for any field adjustments required to accomplish proper installation of the components and the adjacent work which includes but is not limited to BRIDGE RAIL (SPECIAL), OUTLOOK RAIL (SPECIAL) and cast-in-place concrete.

MEASUREMENT: ARCHITECTURAL PRE-CAST CONCRETE – DIES (SPECIAL) will be measured for payment on a per unit basis (each). ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL) will be measured for payment in feet. ARCHITECTURAL PRE-CAST CONCRETE – OUTLOOK CURB (SPECIAL) will be measured for payment in feet. ARCHITECTURAL PRE-CAST CONCRETE POST BASE (SPECIAL) will be measured for payment on a per unit basis (each). The architectural pre-cast concrete coping at the Northwest Stair will not be measured for payment but will be considered incidental to the unit price bid for ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL).

PAYMENT: The work will be paid for at the contract price per each for ARCHITECTURAL PRE-CAST CONCRETE – DIES (SPECIAL), per foot for ARCHITECTURAL PRE-CAST CONCRETE – BRIDGE CURB (SPECIAL), per foot for ARCHITECTURAL PRE-CAST CONCRETE OUTLOOK CURB (SPECIAL), and per each for ARCHITECTURAL PRE-CAST CONCRETE POST BASE (SPECIAL), all measured as specified, whose prices will include payment for all work, including but not limited to the costs of furnishing and installing dowels, mortar, grout and sealants as required.

ARCHITECTURAL PRE-CAST CONCRETE - BENCH PLANTER SYSTEM (SPECIAL)

DESCRIPTION: This work consists of furnishing all labor, materials, tools, and equipment required to furnish and install ARCHITECTURAL PRE-CAST CONCRETE - BENCH PLANTER SYSTEM as shown in the Plans and as directed by the Engineer.

MATERIALS:

ARCHITECTURAL PRE-CAST CONCRETE

Provide pre-cast concrete engineering, fabrication and installation conforming to the requirements indicated in specification section ARCHITECTURAL PRE-CAST CONCRETE. Provide miscellaneous, related components as indicated.

See Section 1061 of the Standard Specification for the waterproofing membrane system.
See Section 503 of the Standard Specification for cast-in-place concrete base

FABRICATION AND ERECTION:
The Contractor must detail each ARCHITECTURAL PRE-CAST CONCRETE - BENCH PLANTER SYSTEM (SPECIAL) to be consistent with the details shown on the plans or as directed by the Engineer. The Contractor will be solely responsible for the detailing and is not to be paid extra for any field adjustments required to accomplish proper installation.

Coordinate fabrication and installation of each unit with lighting system, drainage, waterproofing membrane system and cast-in-place concrete.

METHOD OF MEASUREMENT:
This work will be measured for payment by the unit (each) for ARCHITECTURAL PRE-CAST CONCRETE - BENCH PLANTER SYSTEM (SPECIAL) that is acceptably installed within the limits shown on the Plans or as directed by the Engineer.

BASIS OF PAYMENT:
This work will be paid for at the contract unit price by each for ARCHITECTURAL PRE-CAST CONCRETE - BENCH PLANTER SYSTEM (SPECIAL) measured as specified, which price will be payment in full for all labor, materials, fabrication, transportation, erection, tools, and all other appurtenant work necessary to complete this item.

ARCHITECTURAL PRE-CAST CONCRETE - SOUTHWEST STAIR SYSTEM (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE - SOUTHEAST STAIR SYSTEM (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE - NORTHEAST STAIR SYSTEM (SPECIAL)

DESCRIPTION:
This work consists of furnishing all engineering, labor, materials, tools, and equipment required to furnish and install ARCHITECTURAL PRE-CAST CONCRETE – SOUTHWEST STAIR SYSTEM (SPECIAL), ARCHITECTURAL PRE-CAST CONCRETE – SOUTHEAST STAIR SYSTEM (SPECIAL) and ARCHITECTURAL PRE-CAST CONCRETE – NORTHEAST STAIR SYSTEM (SPECIAL) as shown in the Plans and as directed by the Engineer.

MATERIALS:
ARCHITECTURAL PRE-CAST CONCRETE
Provide pre-cast concrete engineering, fabrication and installation conforming to the

requirements indicated in specification section ARCHITECTURAL PRE-CAST CONCRETE.

Provide miscellaneous, related components as indicated.

FABRICATION AND ERECTION:
The Contractor must detail each stair to be consistent with the details shown on the plans or as directed by the Engineer. The Contractor will be solely responsible for the detailing and is not to be paid extra for any field adjustments required to accomplish proper stair installation.

Coordinate fabrication and installation of each stair with stair railings, cast-in-place concrete foundations, embedded expansion joint rails, riverwalk pavers, bridge abutments and bridge deck.

METHOD OF MEASUREMENT:
ARCHITECTURAL PRE-CAST CONCRETE – SOUTHWEST STAIR SYSTEM (SPECIAL), ARCHITECTURAL PRE-CAST CONCRETE – SOUTHEAST STAIR SYSTEM (SPECIAL) and ARCHITECTURAL PRE-CAST CONCRETE – NORTHEAST STAIR SYSTEM (SPECIAL) will not be measured for payment.

BASIS OF PAYMENT:
This work will be paid for at the contract lump sum price for ARCHITECTURAL PRE-CAST CONCRETE – SOUTHWEST STAIR SYSTEM, ARCHITECTURAL PRE-CAST CONCRETE – SOUTHEAST STAIR SYSTEM (SPECIAL) and ARCHITECTURAL PRE-CAST CONCRETE – NORTHEAST STAIR SYSTEM (SPECIAL), which price will be payment in full for all engineering, labor, materials, fabrication, transportation, erection, tools, and all other appurtenant work necessary to complete each of these items.

STORM SEWER ADJACENT TO OR CROSSING WATER MAIN

Description: This work consists of constructing storm sewer of the specified diameter adjacent to or crossing a 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.

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

Method of Measurement: The storm sewers of the size indicated on the plans will be measured for payment in feet, measured in place.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Trench backfill will not be measured for payment.

Basis of Payment: This work will be paid for in accordance with Article 550.09 of the Standard Specifications, except the pay item shall be STORM SEWER, TYPE 2, WATER MAIN QUALITY of the diameter specified, and shall include all materials, labor, equipment, concrete collars and encasing pipe with seals.

Excavation in rock will be paid for as specified in Article 502.14 for Rock Excavation for Structures.

Trench backfill will not be paid separately but will be considered as included in the contract unit price bid for STORM SEWER, TYPE 2, WATER MAIN QUALITY of the diameter specified.

COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
COMBINATION CONCRETE CURB AND GUTTER, TYPE B-V.12

Work under these items will be performed in accordance with Section 606 of the Standard Specifications as herein modified, and with the details shown on the plans for Combination Concrete Curb and Gutter, Type B-6.12 and Combination Concrete Curb and Gutter, Type B-V.12.

Description: This work will consist of constructing concrete curb and gutter of the type shown on the plans.

Revise the fourth paragraph of Article 606.06 of the Standard Specifications to read:

"Longitudinal construction, transverse contraction, and expansion joints shall be constructed according to the applicable portions of Article 420.10. Two - No. 5 reinforcement bars shall be installed continuous as shown on the plans. Contraction joints shall be sawed to a depth of three inches and to a width of not less than 1/8 inch. The contraction joints shall be sawed every 10 feet between expansion joints within 24 hours of placement. Expansion joints, 3/4 inch, shall be constructed at 100 foot intervals, 5 ft. to 10 ft. either side of structures, P.C. locations and radius points. Place two – 3/4 inch dowel bars with grease gaps at each expansion joint."

Method of Measurement: COMBINATION CONCRETE CURB AND GUTTER of the type specified will be measured for payment in linear feet in the flow line of the gutter and along the face of concrete curb, which measurement will include drainage castings incorporated in various curbs and gutters.

All concrete curb and gutter transitions and depressed curb and gutter will be measured and paid for at the contract unit price per linear foot.

Basis of Payment: This work will be paid for at the contract unit price per linear foot, measured as specified, for COMBINATION CONCRETE CURB AND GUTTER of the type

specified, which price will include payment for all work, including but not limited to the costs of furnishing and installing joints, dowel bars, tie bars, curing, excavating, and backfilling as required.

CATCH BASINS, SPECIAL

Work under this item will be performed in accordance with the applicable portions of Section 602 of the Standard Specifications except as herein modified, and as shown on the plans.

Description: This work shall consist of constructing catch basins with grit oil stops and frames and grates at the locations shown on the plans.

Materials: The materials shall be in accordance with Article 602.02 of the Standard Specifications.

The grit oil stop shall be "The Snout" by Best Management Products, Inc. and shall be installed over the outlet in accordance with the manufacturer's specifications for this product.

General: The precast reinforced concrete manhole sections shall be set in butyl rope and the lift lug holes shall be sealed watertight. The catch basins shall be installed on a 6 inch thick compacted CA-6 cushion conforming to Article 1004.01 of the Standard Specifications.

Frames and grates for the catch basins shall conform to East Jordan Casting No. 7221, Type 1 curb back, Type M1 grate or approved equal.

Flat slab tops, when required, shall meet the requirements of IDOT Standard 602601, the cost of which will be included in the price of the catch basin.

The excavation and backfill for the catch basins shall be in accordance with Article 602.11, with the exception that the backfill material shall be CA-7 conforming to Article 1004.01 of the Standard Specifications.

Measurement: The catch basin shall be measured for payment per each catch basin installed and completed.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Basis of Payment: This work will be paid for at the contract unit price each for CATCH BASINS, SPECIAL with the type of frame and grate specified and the grit oil stop, which price shall include all frames, grates, lids, CA-6 cushion, steps, and flat slab tops, and all excavation and backfilling, except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

INLETS, TYPE A, SPECIAL, WITH SPECIAL FRAME AND GRATE
INLETS, TYPE A, TYPE 4 FRAME AND GRATE

Work under this item will be performed in accordance with the applicable portions of Section 602 of the Standard Specifications except as herein modified, and as shown on the plans.

Description: This work shall consist of constructing inlets with frame and grates at the locations shown on the plans.

Materials: The materials shall be in accordance with Article 602.02 of the Standard Specifications.

General: The precast reinforced concrete manhole sections shall be set in butyl rope and the lift lug holes shall be sealed watertight. The inlets shall be installed on a 4 inch thick compacted CA-6 cushion conforming to Article 1004.01 of the Standard Specifications.

Frames and lids for the Inlets, Type A, Special, with Special Frame and Grate shall conform to East Jordan Casting No. 7221, Type 1 curb back, Type M1 grate or approved equal.

Frames and lids for the Inlets, Type A, Type 4 Frame and Grate shall meet the requirements of IDOT Standard 604016

The excavation and backfill for the inlets shall be in accordance with Article 602.11, with the exception that the backfill material shall be CA-7 conforming to Article 1004.01 of the Standard Specifications.

Measurement: The inlets shall be measured for payment per each inlet installed and completed.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Basis of Payment: This work will be paid for at the contract unit price each for INLETS, TYPE A, SPECIAL, WITH SPECIAL FRAME AND GRATE and INLETS, TYPE A, TYPE 4 FRAME AND GRATE, with the type of frame and grate specified, which price shall include all frames, grates, lids, CA-6 cushion and all excavation and backfilling, except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

DROP MANHOLES, TYPE A2-2, 4'-DIAMETER, SPECIAL FRAME AND LID
DROP MANHOLES, TYPE A2-3, 5'-DIAMETER, SPECIAL FRAME AND LID

Work under this item will be performed in accordance with the applicable portions of Section 602 of the Standard Specifications except as herein modified, and as shown on the plans.

Description: This work shall consist of constructing drop manholes with frame and lids at the locations shown on the plans.

General: The precast reinforced concrete manhole sections shall be set in butyl rope and the lift lug holes shall be sealed watertight. The manholes shall be installed on a 6 inch thick compacted CA-6 cushion conforming to Article 1004.01 of the Standard Specifications.

Frames and lids for the manholes shall conform to East Jordan Casting No. 1020 or approved equal. The solid lid shall have concealed pickholes and a watertight gasket. The words "CITY OF BATAVIA" and "STORM" shall be cast into the lids.

The vertical drop pipe shall be encased in Class SI concrete and shall be doweled and reinforced with epoxy coated reinforcement as shown on the plans. The cost of the vertical drop pipe, necessary fittings and the reinforced concrete encasement shall be included in the cost of the drop manhole.

The excavation and backfill for the manholes shall be in accordance with Article 602.11, with the exception that the backfill material shall be CA-7 conforming to Article 1004.01 of the Standard Specifications.

Measurement: The drop manholes shall be measured for payment per each drop manhole installed and completed.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Basis of Payment: This work will be paid for at the contract unit price each for DROP MANHOLES, TYPE A2-2, 4'-DIAMETER, SPECIAL FRAME AND LID and DROP MANHOLES, TYPE A2-3, 5'-DIAMETER, SPECIAL FRAME AND LID with the type of frame and grate specified, which price shall include all frames, grates, lids, CA-6 cushion, steps, vertical drop pipe, dowel bars, steel reinforcement and all excavation and backfilling, except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

PIPE DRAINS 4" (SPECIAL)
PIPE DRAINS 6" (SPECIAL)

Work under these items will be performed in accordance with Section 601 of the Standard Specifications as herein modified.

Description: This work will consist of constructing pipe drains of the required inside diameter for the River Walk area drain system and downspout conveyance.

Method of Measurement: PIPE DRAINS (SPECIAL) of the size and type specified will be measured for payment in linear feet in place and accepted by the Engineer.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Trench backfill will be measured for payment as specified in Article 208.03 of the Standard Specifications.

Basis of Payment: This work will be paid for at the contract unit price per linear foot, measured as specified, for PIPE DRAINS (SPECIAL) of the size and type specified, which price shall include all necessary materials, excavation, installation of pipe, fittings, and all labor, tools, equipment and incidental items as shown on the plans and as specified herein to complete the work.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

Trench backfill will be paid for as specified in Article 208.03 of the Standard Specifications.

SIDEWALK DRAINS

Description: This work shall include installing sidewalk drains at locations shown on the plans or as directed by the Engineer.

General: The sidewalk drains shall be approximately 12-1/2" square with a grate approximately 10-1/2" square. The grate openings shall be no larger than 1/2" in the largest dimension. The total open area of the grate shall be at least 42 square inches. The sidewalk drains shall be equipped with a sediment bucket and a dome bottom strainer. The outlet shall be located in the base of the drain and sized to for a 4" PVC outlet pipe.

Sidewalk drains shall be installed according to the manufacturer's specifications.

Excavation and backfill shall be in accordance with Article 602.11 of the Standard Specifications.

Materials: The sidewalk drains shall be constructed of 14 Gauge Type 304 stainless The lid shall be vandal proof and constructed of stainless steel or nickel-bronze.

The vertical 4" PVC Pipe Drain utilized to connect the area drain with the Pipe Drain (Special) shall be not be measured separately for payment but shall be included in the contract unit bid unit price for SIDEWALK DRAINS.

Method of Measurement: SIDEWALK DRAINS will be measured for payment as each area drain is accepted by the Engineer.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Basis of Payment: This work shall be paid for at the contract unit price each for SIDEWALK DRAINS which price shall include all necessary materials, excavation, backfill, installation of

pipe, fittings, and all labor, tools, equipment and incidental items as shown on the plans and as specified herein to complete the work.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

DOWNSPOUT CONNECTION

Description: This work shall include installing downspout connections from existing downspouts to the proposed drainage system at the locations shown on the plans or as directed by the Engineer.

General: Downspout connections shall be sized to fit the existing downspout and a 4" inside diameter PVC pipe and shall be installed according to the manufacturer's specifications.

Excavation and backfill shall be in accordance with Article 602.11 of the Standard Specifications.

The vertical 4" PVC Pipe Drain installed between the Downspout Connections and the Pipe Drain (Special) will be not be measured separately for payment but will be considered as included in the contract unit price bid for DOWNSPOUT CONNECTION.

Materials: The downspout connections shall be constructed of cast iron and finished with black paint meeting the requirements of the manufacturer.

Method of Measurement: DOWNSPOUT CONNECTION will be measured for payment as each downspout connection is accepted by the Engineer.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Basis of Payment: This work shall be paid for at the contract unit price each for DOWNSPOUT CONNECTION, which price shall include all necessary materials, excavation, backfill, installation of pipe, fittings, and all labor, tools, equipment and incidental items as shown on the plans and as specified herein to complete the work.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

DUCTILE IRON WATER MAIN 8"
DUCTILE IRON WATER MAIN 10"

Description: This work shall consist of constructing ductile iron water main at the locations shown on the plans or as directed by the Engineer.

Materials: The water main pipe shall be ductile iron pipe, Class 52 or 54, conforming to AWWA C151/ANSI A21.51 with cement mortar lining per AWWA C104/ANSI 21.4.

The water main joints shall be push-on type conforming to AWWA C111/ANSI 21.11.

All ductile iron water main shall be encased in polyethylene encasement tubing in accordance with AWWA C105/ANSI 21.5. The polyethylene material shall be Class "C" and shall be installed by "Method A" or "Method B" as listed in ANSI 21.5.

A water main fittings shall be ductile iron, Class 52, with mechanical joints. The fittings shall conform to AWWA C110/ANSI 21.10. The mechanical joints shall conform to AWWA C111 /ANSI 21.11 and AWWA C600. Fittings shall be bituminous (seal) coated on the exterior and cement –mortar lined on the interior in accordance with AWWA C104/ANSI 21.4.

Mega-lug retainer glands shall be used on all offset fittings.

General: All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

Fittings and specials shall be furnished and installed with accessories needed for a complete and operating installation.

Mega-lugs shall be used for all thrust restraints.

All water mains shall be installed with a minimum five foot six inches of cover and a maximum of ten feet of cover from finished grade unless approved by the City Engineer.

The requirements of the IEPA shall govern the horizontal and vertical separation of water service lines from sewers.

Backfilling shall be in accordance with the special provisions for TRENCH BACKFILL and BACKFILLING SEWERS AND CONDUITS UNDER ROADWAYS AND SIDEWALKS and the applicable requirements of Article 550.07 of the Standard Specifications.

Backfilling around joints shall not be made until the hydrostatic tests have been made and any leaks have been repaired.

Hydrostatic Tests: Pressure and leakage tests shall be in accordance with the basic provisions of AWWA C600 and Section 41-2.13 of the Standard Specifications for Water and Sewer Main Construction in Illinois to the satisfaction of the City of Batavia Water Department. Water for performing the tests shall be supplied by the City of Batavia.

Disinfection of Water Main: After the pressure and leakage test are completed and prior to being put into service, the water main shall be disinfected according to AWWA C651. The clorination requirements shall be in accordance with Section 41-2.14 of the Standard Specifications for Water and Sewer Main Construction in Illinois and to the satisfaction of the City of Batavia Water Department.

Method of Measurement: The water main of the size indicated on the plans shall be measured for payment in feet, measured in place.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Trench backfill will not be measured for payment.

Basis of Payment: This work shall be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN 8" and DUCTILE IRON WATER MAIN 10", which price shall include all pipe fittings, joint materials, restraints, the hydrostatic tests, disinfecting of the water main and all excavation, except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

Trench backfill will not be paid for separately but will be considered as included in the contract unit price bid for various sizes of DUCTILE IRON WATER MAIN.

WATER SERVICE LINE 3/4"

Description: This work shall consist of constructing Type K copper water service and tapping the service line to a new water main as shown on the plans and in accordance with the City of Batavia Standard Details or as directed by the Engineer.

Materials: The water service pipe shall be 3/4-inch diameter copper pipe, Type K conforming to ASTM B-88 and B-251 Specifications. Fittings shall be bronze and of the compression type.

General: All services shall be equipped with corporation stop, curb stop and curb box in accordance with the Special Provisions for CORPORATION STOPS 3/4" and CURB STOP & BOX 3/4 INCH. Water main services shall be connected to the corporation stop in accordance with the manufacturer's recommendations. Tapping of the proposed water main shall be included in the cost of this item. All taps shall have a minimum of three feet separation.

All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

All water services shall be installed with a minimum five foot six inches of cover and a maximum of ten feet of cover from finished grade unless approved by the City Engineer.

The requirements of the IEPA shall govern the horizontal and vertical separation of water service lines from sewers.

Backfilling shall be in accordance with the special provisions for TRENCH BACKFILL and BACKFILLING SEWERS AND CONDUITS UNDER ROADWAYS AND SIDEWALKS and the applicable requirements of Article 550.07 of the Standard Specifications.

This work shall include all necessary materials, labor, excavation, backfill and equipment necessary to connect the proposed service to the water main.

Method of Measurement: The water service line of the size indicated on the plans will be measured for payment in feet, measured in place.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Trench backfill will not be measured for payment.

Corporation stops, curb stops and curb boxes will be measured for payment as each in accordance with the special provisions for CORPORATION STOPS 3/4" and CURB STOP AND BOX 3/4".

Basis of Payment: This work will be paid for at the contract unit price per foot for WATER SERVICE LINE 3/4", which price shall include all necessary materials, excavation, installation of pipe, fittings, and all labor, tools and all equipment necessary to complete the work.

Excavation in rock will be paid for as specified in Article 502.14 for

Trench backfill will not be paid for separately but will be considered as include in the contract unit bid price for WATER SERVICE LINE 3/4".

WATER SERVICE LINE 6"

Description: This work shall consist of constructing ductile iron water services and connecting the service line to a new water main as shown on the plans or as directed by the Engineer.

Materials: The water service pipe shall be ductile iron pipe, Class 52 or 54, conforming to AWWA C151/ANSI A21.51 with cement mortar lining per AWWA C104/ANSI 21.4.

The water service pipe joints shall be push-on type conforming to AWWA C111/ANSI 21.11.

All ductile iron service pipe shall be encased in polyethylene encasement tubing in accordance with AWWA C105/ANSI 21.5. The polyethylene material shall be Class "C" and shall be installed by "Method A" or "Method B" as listed in ANSI 21.5.

All water service fittings shall be ductile iron, Class 52, with mechanical joints. The fittings shall conform to AWWA C110/ANSI 21.10. The mechanical joints shall conform to AWWA C111 /ANSI 21.11 and AWWA C600. Fittings shall be bituminous (seal) coated on the exterior and cement –mortar lined on the interior in accordance with AWWA C104/ANSI 21.4.

Mega-lug retainer glands shall be used on all offset fittings.

General: A ductile iron tee shall be placed in the water main at the service connection and the service shall be connected to the water main by means of a gate and connecting pipe. The water valve and valve box shall be in accordance with the special provision for WATER VALVES 6" WITH VALVE BOX. All water services shall have a minimum of three feet separation.

All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

All water services shall be installed with a minimum five foot six inches of cover and a maximum of ten feet of cover from finished grade unless approved by the City Engineer.

The requirements of the IEPA shall govern the horizontal and vertical separation of water service lines from sewers.

Backfilling shall be in accordance with the special provisions for TRENCH BACKFILL and BACKFILLING SEWERS AND CONDUITS UNDER ROADWAYS AND SIDEWALKS and the applicable requirements of Article 550.07 of the Standard Specifications.

Method of Measurement: The water service line of the size indicated on the plans will be measured for payment in feet, measured in place.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Trench backfill will not be measured for payment.

The water valve and valve box will be measured for payment in accordance with the special provisions for WATER VALVES 6" WITH VALVE BOX.

Basis of Payment: This work will be paid for at the contract unit price per foot for WATER SERVICE LINE6", which price shall include all necessary materials, excavation, installation of pipe, fittings, tees, backfill ,and all labor, tools and all equipment necessary to complete the work.

Excavation in rock will be paid for as specified in Article 502.14 for Rock Excavation for Structures.

Trench backfill will not be paid separately but will be considered as included in the contract unit price bid for WATER SERVICE LINE 6".

The water valve and valve box will be paid for accordance with the special provisions for WATER VALVES 6" WITH VALVE BOX.

CORPORATION STOPS 3/4"

Description: This work shall include the installation of corporation stops for tapping a new Type K copper water service to a new water main as shown on the plans or as directed by the Engineer.

Materials: Water service stops shall be of brass and of the type that is standard with the City of Batavia, Mueller H-15000.

General: Water main services shall be connected to the corporation stop in accordance with the manufacturer's recommendations. Tapping of the proposed water main shall be included in the cost of the water main service.

All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

Method of Measurement: The corporation stops will measured for payment on an each basis at each location shown on the plans.

Basis of Payment: This work will be paid for at the contract unit price each for CORPORATION STOPS 3/4", which price shall include all necessary materials and all labor, tools, and equipment necessary to complete the work.

CURB STOP AND BOX 3/4"

Description: This work shall include the installation of curb stops and buffalo boxes for the new Type K copper water service lines at the locations shown on the plans or as directed by the Engineer.

Materials: The curb stop shall be a compression type joint connection by Mueller, Minneapolis Pattern H-15154. The curb box shall be a brass plug 1-1/4 inch extension type with Minneapolis Pattern base by Mueller Model H`0300-99008 that is base tapped 2 inch and bushed to 1-1/2 inch.

General: The water service lines shall be connected to the curb boxes. Curb stops shall be at a minimum five foot six inch depth of bury.

All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

The buffalo box shall be marked at the time of construction with a 2 inch x 4 inch wood post painted blue four feet above grade at the buffalo box.

Method of Measurement: The curb stops and curb boxes will measured for payment on an each basis for each location shown on the plans.

Basis of Payment: This work will be paid for at the contract unit price each for CURB STOP AND BOX 3/4", which price shall include all necessary materials and all labor, tools, and equipment necessary to complete the work.

WATER VALVES 6" WITH VALVE BOX
GATE VALVES 8"
GATE VALVES 10"
VALVE VAULTS, 4' DIAMETER
TAPPING VALVES AND SLEEVES 8"
TAPPING VALVES AND SLEEVES 10"

Description: This work shall include the installation of water valves, valve boxes, valve vaults and tapping valves and sleeves at the locations shown on the plans or as directed by the Engineer.

General: All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

Gate valves shall be resilent wedge gate valves meeting the requirements of AWWA C-509 and shall be Mueller, Clow, Waterous or approved equal. All nuts and bolts on the valve shall be stainless steel. The gate valves shall be set on a precast concrete block as shown on the plans.

The gate valves for the four inch water service lines shall be installed in a valve box. Valves boxes shall be Tyler Series 6850 or approved equal with the word "WATER" cast on the lid.

The gate valves for the water main shall be installed in a valve vault of the as shown on the plans. Megalugs shall be used and the interior of the vault shall be coated with a resinous or polymeric coating conforming to AWWA C550.

The water valve vaults shall be constructed in accordance with the applicable portions of Section 602 of the Standard Specifications, expect as herein modified, and as shown on the plans.

The precast reinforced concrete manhole sections shall be set in butyl rope and the lift lug holes shall be sealed watertight. The water vault opening shall be centered over the valve and the casting shall be set at finished grade as shown on the plans. The vaults shall be installed on a 6 inch thick compacted CA-6 cushion conforming to Article 1004.01 of the Standard Specifications.

Frames and lids for valve vaults shall conform to East Jordan Casting No. 1020 or approved equal. The solid lid shall have concealed pickholes and a watertight gasket. The words "CITY OF BATAVIA" and "WATER" shall be cast into the lids.

Tapping valves and sleeves shall be in accordance with the Standard Specifications for Water and Sewer Main Construction in Illinois of the size shown on the plans. Tapping valves shall conform to AWWA specification C509, resilient wedge gate valves. Tapping valves and sleeves shall be installed in precast concrete vaults of the size and type shown on the plans. All tapping tees shall be stainless steel, unless the tap is the same diameter as the pipe being tapped, or

greater than or equal to 12" diameter, in which case the tapping tee shall be iron.

Submittals: Shop drawings shall be submitted and approved by the Engineer prior to delivery of valves to construction site. Submittal will include catalogue data, weight, information, assembly drawings, affidavit of compliance, and records of the following tests: operation test, shell test, seal test, hydrostatic test, torque test, leakage test and pressure test as set forth in AWWA C-509.

Method of Measurement: The Water Valves 4" with Valve Box, Gate Valve and Vault 12", and Tapping Valves and Sleeves 12" shall measured for payment on a per each basis at each location shown on the plans.

Basis of Payment: This work shall be paid for at the contract unit price each for WATER VALVES 6" WITH VALVE BOX; GATE VALVES 8"; GATE VALVES 10"; VALVE VAULTS, 4' DIAMETER; TAPPING VALVES AND SLEEVES 8"; and TAPPING VALVES AND SLEEVES 10" which price shall include all materials, including frames, grates, lids, CA-6 cushion, steps and all excavation and backfilling, except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.14 for Rock Excavation for Structures.

FIRE HYDRANTS TO BE REMOVED

Description: This work shall consist of removing the existing fire hydrant and auxiliary valve and associated piping at the locations and shown on the plans or as directed by the Engineer.

To minimize the inconvenience to affected residents, 48 hours prior to shutting the existing main down, the City of Batavia and all users that will be affected shall be notified in writing.

The Contractor shall cooperate with the City of Batavia's Department of Public Works personnel to locate valves necessary to isolate the work areas. All valves will be operated by City of Batavia Public Works personnel (call 630-879-1424 a minimum of 48 hours in advance to schedule this work).

The Contractor shall excavate a deep enough sump pit at the location where piping will be removed so that dewatering pumps will prevent contaminated trench water from entering the existing water main. Restrained mechanical plugs with thrust blocks shall be installed at all locations of fire hydrant removals and shall be installed at the main line tee. Plug shall be properly disinfected prior to installation. The Contractor shall install any necessary corporation stops to facilitate disinfection and sampling procedures. Refer to the As-built drawings to reflect actual location of buried tee.

Method of Measurement: Measurement for fire hydrants to be removed shall be measured for payment on a per each basis at each location shown in the plans.

Basis of Payment: This work shall be paid for at the contract unit price each for FIRE HYDRANTS TO BE REMOVED, which price shall be considered payment in full for all excavation, removal of existing piping, plugs, thrust blocking, backfill, materials, labor,

equipment, delivery of hydrant to Owner, and all labor, tools, equipment and incidental items as shown on the plans and as specified herein to complete this work.

FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX

Description: This item shall consist of furnishing fire hydrants with auxiliary valves with valve boxes and installing them at the locations shown on the drawings and in accordance with the Standard Specifications for Water and Sewer Main Construction in Illinois.

Fire Hydrants

Fire hydrants shall be Clow Medallion, Waterous Pacer, or Mueller Centurion 200. Model shall be a breakaway flange type with bronze to bronze seating and shall be provided with a valve opening of 5-1/4 inches and equipped with two 2-1/2 inch hose connections and one 4-1/2 inch steamer outlet connection. Outside diameter of the male thread on the 2-1/2 inch hose connection shall be National Standard threads.

A suitable tee of the quality and kind herein specified shall be placed in the water main opposite each of the fire hydrants and shall be connected with the hydrant by means of the valve and connecting pipe. Each hydrant should be provided with stainless steel rods with restraining joints. All nuts, bolts and threaded rods shall be stainless steel.

Each hydrant shall be provided with a drain that will leave no water standing in the barrel of the hydrant when the hydrant is closed. This drain shall close tightly before the hydrant begins to open. The hose and pumper connections shall be securely leaded and locked into the hydrant and each shall be provided with a suitable cast iron threaded cover securely attached to the hydrant by a steel chain of at least 1-1/8" thickness.

The fire hydrant shall be designed to withstand, without leaking or damage to the hydrant, a hydraulic pressure of 300 pounds per square inch and an operating pressure of 150 pounds per square inch.

6" Auxiliary Valves and Valve Box

Gate valves shall meet the requirements of the latest revision of AWWA C509. Gate valves shall open to the left (counter clockwise) and shall have mechanical joints ends. Gate valves through 12" in diameter shall have resilient seats. Gate valves installed in fire hydrant leads shall have "0 ring stuffing box. Gate valves shall be as manufactured by Mueller, Clow, Waterous, or approved equal.

Stem and all working parts shall be fully protected from moisture or weather damage by complete enclosure. Operating nuts shall be stainless steel. Operating nuts shall be 2 inches square. All nuts, bolts and threaded rods shall be stainless steel.

Valves shall be installed in accordance with the manufacturer's recommendations. Valves shall be placed on a precise concrete valve pedestal of the dimensions shown on the drawings.

A 1-1/2" preformed joint filler shall be placed between the valve and the pedestal to facilitate future removal of the valve.

Valves boxes shall be Tyler Series 6850 or approved equal with the word "WATER" cast on the lid.

Each hydrant shall be rodded to the supplying tee fitting and set on a flat stone or concrete thrust block not less than 24 inches by 24 inches by 4 inches in thickness. A minimum of 1 cubic yard of washed stone shall be placed around the base of the hydrant in order to provide drainage for the hydrant drain.

All hydrants shall be set plumb and shall have their nozzles parallel with edge of pavement; the pumper connection shall be facing the edge of pavement. Hydrants shall be set to the established grade, with nozzles eighteen (18) inches above the ground or as directed by the City of Batavia Water Department.

All excavation around the fire hydrant and auxiliary valve shall be backfilled to the natural line or finished grade as rapidly as possible. The backfill material shall consist of the excavated material or trench backfill as herein specified.

All backfill material shall be deposited in the excavation in a manner that will not cause damage to the fire hydrant or auxiliary valve. Any depressions which may develop within the area involved in a construction operation due to settlement of backfill material shall be filled in a manner consistent with standard practice.

The fittings, piping and valves for the hydrant shall be provided with restrained joints in addition to the rodded connection and the thrust block behind the base elbow.

Each hydrant shall be painted with two coats of paint matching the City of Batavia standard for color, commonly know as "Parrot Green", Tnemec Paint Corporation No. G1499 or Waterous Color by Sierra Paint Corporation No. 6590-M-4188. Hydrants shall have "Hydrafinder Standard" hydrant locators.

All retainer glands when required to restrain valves, fittings, hydrants, and pipe joints shall be mechanical joint wedge action type MEGALUG 1100 Series as manufactured by EBBA Iron, Inc. or approved equal and shall be for use on ductile iron pipe conforming to ANSI/AWWA C1511A21.51, for nominal pipe sizes 3" through 48".

Method of Measurement: Measurement for the installed fire hydrant with auxiliary valve and valve box complete and including all appurtenances shall be measured for payment on a per each basis at each location.

Basis of Payment: This work shall be paid for at the contract unit price each for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX, which price shall be considered payment in full for completing this work as specified, including furnishing and installing the fire hydrant with auxiliary valve and valve box, drainage stone, thrust block, appurtenances, backfilling and all labor, tools, equipment and incidental items as shown on the plans and as specified herein to complete this work.

DRINKING FOUNTAIN RELOCATED

Description: This work shall include the removal and reinstallation of the existing water fountain in front of 7 East Wilson Street as directed by the Engineer

General: All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction and in a manner meeting the approval of the Engineer.

The water fountain shall be removed in a manner that prevents damage and stored at a location approved by the Engineer in a manner that prevents damage from occurring to the water fountain.

The water fountain shall be reinstalled after the proposed sidewalk has been installed in front of 7 East Wilson. The water fountain shall be reinstalled in front of 7 East Wilson at the location indicated on the plans and as approved by the Engineer. The water fountain shall be connected to the existing water supply from 7 East Wilson.

This work shall include all necessary materials, labor, excavation, backfill and equipment necessary to disconnect, remove to protected storage, reinstall and connect the drinking fountain to the existing water supply.

Method of Measurement: The removal and reinstallation of the water fountain will be measured for payment in place as each at each location shown on the plans

Basis of Payment: This work will be paid for at the contract unit price each for DRINKING FOUNTAIN RELOCATED, which price shall include all necessary materials, labor, tools and equipment necessary to complete the work including connecting to the existing water supply.

STOP VALVE, 3/4" AND VALVE BOX

Description: This work shall include the installation of stop valves of the sizes indicated and valve boxes for the new Type K copper water service lines at the locations shown on the plans or as directed by the Engineer.

Materials: Stop valves shall be shall be a compression-type fitting constructed of brass and sized for 3/4" Type K copper pipe. The tee connection to the water service line shall be use compression fittings. Valves boxes shall be Tyler Series 6850 or approved equal with the word "WATER" cast on the lid

General: Stop valves shall be installed within a valve box and connected to the water service line using a compression type tee connection and a sufficient length of 3/4" Type K copper pipe to bring the stop valve up to 12" below finished grade. One end of the stop valve shall not be connected to any pipe or plugged

All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

Method of Measurement: Stop valve, 3/4" and valve box will measured for payment on an each basis for each location shown on the plans.

The tee connection and Type K copper pipe required to connect to the water service line will not be measured separately for payment.

Basis of Payment: This work will be paid for at the contract unit price each for STOP VALVE, 3/4" AND VALVE BOX which price shall include all necessary materials and all material, labor, tools, and equipment necessary to complete the work.

The tee connection and Type K copper pipe required to connect to the water service line will not be paid for separately but will be considered as included in the contract unit bid price for STOP VALVE, 3/4" AND VALVE BOX.

WALL HYDRANT

General: This work shall consist of furnishing and installing wall hydrants at the locations shown on the plans.

Description: The wall hydrant shall be an anti-siphon, automatic draining, non-freeze wall hydrant complete with integral backflow preventer, brass casing, all bronze interior parts, non-turning operating rod with free-floating compression closure valve, replaceable bronze seat and seat washer, and combination 3/4" female and 3/4" male IP inlet connection standard. The hydrant shall be housed in a cast nickel bronze box with a lockable hinged cover. The hydrant shall include an operating key to control the flow of water. Wall thickness shall be 24 inches.

Submittals: The Contractor shall submit product cut sheets for approval by the Engineer.

Suppliers:

The wall hydrants shall be selected from the following models and manufacturers:

Z1305 Wall Hydrant and Box
Zurn Plumbing Products Group
1801 Pittsburgh Avenue
Erie, PA 16502
Phone: (814) 455-0921
Fax: 875-1402 (Fax)

8600L24+2, 175 Wall Hydrant with Box
Tyler Pipe/Wade Division
P.O. Box 2027
Tyler, TX 75710-2027
Phone: (903) 882-5511
Fax: (888) 879-9233

C634 Wall Hydrant with Box
Prier Products, Inc.
4515 East 139th Street

Grandview, MO 64030
Phone: (816) 763-4100
Fax: (800) 362-1463

Execution: Wall Hydrants shall be installed in accordance with the manufacture's requirements and as directed by the Engineer.

All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

Method of Measurement: WALL HYDRANTS will be measured for payment in place as each installed at the locations shown on the plans.

Basis of Payment: This work will be paid for at the contract unit price each for WALL HYDRANT which price shall include installing at the locations indicated on the plans and connecting to the water service connection.

ABANDON WATER MAIN

Description: This work shall be in accordance with Section 561 of the Standard Specifications, the Supplemental Specifications for Water Main Improvements, the City of Batavia Code Book, and the "Standard Specifications for Water and Sewer Main Construction in Illinois", insofar as applicable, and the following provisions.

General: The work shall consist of abandoning water main at locations shown on the plans or as directed by the Engineer.

The termini of the abandoned water main shall be cut, capped and blocked at the locations shown on the plans or as directed by the Engineer.

The work shall include removing, capping and blocking the existing water main if it interferes with the installation of the proposed water main at the locations shown on the plans or as directed by the Engineer.

Existing water services shall be transferred to the proposed water mains in accordance with the requirements of the City of Batavia as shown on the plans and as directed by the Engineer.

Method of Measurement: This work will not be measured for payment.

Basis of Payment: The work to abandon the existing water main will not be paid for separately but will be considered as included in the contract unit bid price for the various water main items and appurtenances.

SANITARY MANHOLES TO BE REMOVED

Description: This work shall consist of removing existing sanitary manholes in accordance with the applicable portions of Section 605 of the Standard Specifications at the locations shown on the plans or as directed by the Engineer.

General: Existing sanitary manholes shall be removed to the full depth of structure and the hole formed by the removal of the structure backfilled in accordance with Article 605.03 of the Standard Specifications.

The Contractor shall be responsible for maintaining sanitary drainage, including sewage pumping and fluming during the work in accordance with Article 202.05 of the Standard Specifications.

At locations where the existing manhole designated for removal is to be replaced by a new manhole, the installation of the new manhole shall be installed as soon as possible in order to avoid the need for backfilling the hole formed by the removal of the manhole.

The disposal of the manhole material shall be in accordance with Article 605.05 of the Standard Specifications.

Measurement: The sanitary manholes for removal shall be measured for payment per each sanitary manhole removed.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Basis of Payment: This work will be paid for at the contract unit price each for SANITARY MANHOLES TO BE REMOVED, which price shall include removing and disposing of the existing manhole, maintaining temporary drainage, all sheeting and shoring required, and all excavation and backfilling, except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

SANITARY SEWER REMOVAL 8"

Description: This work shall consist of removing existing sanitary manholes in accordance with the applicable portions of Section 551 and Section 563 of the Standard Specifications and the Standard Specifications for Water and Sewer Main Construction in Illinois at the locations shown on the plans or as directed by the Engineer.

General: The Contractor shall coordinate his/her operations to construct as much of the new sanitary sewer and the service reconnections as possible prior to the removal of the sanitary sewer. It shall be the Contractor's responsibility to determine the exact locations of the existing sanitary sewer and service connections.

The Contractor shall be responsible for maintaining sanitary drainage, including sewage pumping and fluming during the work in accordance with Article 202.05 of the Standard Specifications.

Trenches resulting from the removal of the sanitary sewer shall be backfilled in accordance with the special provisions for TRENCH BACKFILL and BACKFILLING SEWERS AND CONDUITS

The excavation and backfill for the manholes shall be in accordance with Article 602.11, with the exception that the backfill material shall be CA-7 conforming to Article 1004.01 of the Standard Specifications.

The Contractor shall be responsible for maintaining sanitary drainage, including sewage pumping and fluming during the work in accordance with Article 202.05 of the Standard Specifications.

Measurement: The sanitary manholes shall be measured for payment per each sanitary manhole installed and completed.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Basis of Payment: This work will be paid for at the contract unit price each for MANHOLES, SANITARY, WITH SPECIAL FRAME AND CLOSED LID, which price shall include all frames, grates, lids, CA-6 cushion, steps, maintaining temporary drainage, all sheeting and shoring required, and all excavation and backfilling, except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

SANITARY SEWER, PVC (D3034) SDR 26, 8"
SANITARY SEWER, DUCTILE IRON PIPE CLASS 52, 8 INCH

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

Materials: Polyvinyl Chloride sanitary sewer pipe shall conform to ASTM D-3034, Standard Dimension Ratio (SDR) 26.

Ductile iron sanitary sewer pipe shall be conform to ASTM C151 and shall be Class 52 with push on joints or restrained joints where applicable. The ductile iron pipe shall be manufactured by Griffin Pipe Company, H2Sewer Safe or approved equal. All ductile iron pipe shall included poly-wrap.

General: All work shall be performed in accordance with the appropriate sections of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

Fittings and specials shall be furnished and installed with accessories needed for a complete and operating installation.

All sanitary sewer pipe including service lines shall be bedded and cradled to the centerline of the pipe in sand or fine gravel. From the centerline of the pipe to 12 inches over the top of the pipe, granular trench backfill material shall be hand placed and compacted as shown on the plans.

Backfilling shall be in accordance with the special provisions for TRENCH BACKFILL and BACKFILLING SEWERS AND CONDUITS UNDER ROADWAYS AND SIDEWALKS the applicable requirements of Article 550.07 of the Standard Specifications and the following City of Batavia requirements:

PVC pipe shall be bedded and cradled in accordance with ASTM-2321 (Class 1) Specifications. All trenches within streets and for sanitary sewers constructed under proposed paved areas shall be backfilled with CA-7 crushed stone. Flowable fill in accordance with IDOT Special Provision for Controlled Low-Strength Materials (CLSM) may be requried under certain circumstances as directed by the Batavia Department of Public Works or the City Engineer. If CSLM is required it will included in the cost of the trench backfill. CA-6 crushed stone trench backfill (95%) compaction at one foot intervals according to City of Batavia policy or other suitable trench backfill may be substituted for CA-7 under the following conditions, 1) approved by Street Department Superintendent and City Engineer, 2) on-site inspection of trench backfill during construction.

The requirements of the IEPA shall govern the horizontal and vertical separation of water service lines from sewers.

The Contractor shall be responsible for maintaining sanitary drainage, including sewage pumping and fluming during the work in accordance with Article 202.05 of the Standard Specifications.

A non-shear "Mission" brand coupling shall be used when joining pipes made of dissimilar material or where no "hub" end exists. PVC transition fittings shall be used when joining PVC pipes of dissimilar material.

Sanitary Sewer Services: Sanitary sewer stubs installed for house service connections shall be constructed as shown on the plans and in accordance with the Standard Specifications for Water and Sewer Main Construction. Sewer stubs shall be extended to the right-of-way. The exact location shall be determined in the field, and the constructed location accurately recorded and the end marked with a 2'x4' post painted green. Service lines shall have a minimum slope of 2.0%.

Leakage Testing: All sanitary sewers shall be tested for watertightness by the air testing method specified in the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

Deflection Testing: All sanitary sewer main constructed of PVC pipe shall be tested for deflection in accordance with the requirements of the Standard Specifications for Water and Sewer Main Construction in Illinois and in a manner meeting the approval of the Engineer.

T.V. Inspection: Prior to acceptance of the sanitary sewers by the City of Batavia all sanitary sewer mains shall be internally inspected by television camera. The City Engineer is to be notified prior to the inspection. VHS video tapes of the T.V. inspection shall be recorded and given to the City and the Engineer for their records. Correction of any irregularities shall be the responsibility of the Contractor.

Vacuum testing: Vacuum testing shall be carried out immediately after assembly and prior to backfilling. All lift holes should be plugged with an approved non-shrink grout or rubber plug. No grout will be placed in the horizontal joints before testing. All pipes entering the manhole shall be plugged, taking care to securely brace the plugs from being drawn into the manhole. A vacuum of ten (10) inches of mercury shall be placed on the manhole and the time measured for the vacuum to drop to nine (9) inches of mercury. The vacuum shall not drop below nine (9) inches of mercury for the following time periods for each size manhole:

Forty-eight (48) inches diameter-- Sixty (60) seconds
Seventy-two (72) inches diameter-- Ninety (90) seconds

The vacuum tester shall be manufactured by P.A. Glazer, Inc.,Worcester, M.A. 01613, Phone (800) 822-6488, or other testing equipment meeting the same standards. If approved by the City Department of Public Works all testing shall be done in accordance with the requirements of P.A. Glazer, Inc. If testing fails the Contractor shall seal all leaks with material and methods recommended by P.A. Glazer, Inc. and re-tested until acceptable. It is recommended that this testing be done before backfilling so that any leaks can be found and fixed externally. The manhole frame and adjusting rings shall be in place when testing.

Connections to Existing Structures: Connections to existing manholes shall be made with rubber gasketed couplings, reconstruction of the manhole bench, when required, and plugging the entrance hole with Class SI concrete or non-shrink grout to form a watertight seal. If the connection is not made at hole from a sewer to be removed, machine coring of the manhole will be required. This work shall be included in the cost of the sanitary sewer.

Method of Measurement: The sanitary sewer of the size and type indicated on the plans shall be measured for payment in feet, measured in place.

Excavation in rock will be measured for payment as specified in Article 502.14 of the Standard Specifications for Rock Excavation for Structures.

Trench backfill will be measured for payment as specified in Article 208.03 of the Standard Specifications.

Basis of Payment: This work shall be paid for at the contract unit price per foot for SANITARY SEWER, PVC (D3034) SDR 26, 8" SANITARY SEWER, DUCTILE IRON PIPE CLASS 52, 8 INCH, which price shall include all pipe fittings, connection of existing services, deflection testing, leakage testing, vacuum testing, maintaining existing drainage and all excavation, except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.15 of the Standard Specifications.

Trench backfill will be paid for as specified in Article 208.03 of the Standard Specifications.

TURBIDITY CURTAIN

Description: This work shall consist of furnishing the materials, equipment, and labor, to install the Turbidity Curtain and all appurtenances that are specified in the plans and provisions.

General: The Turbidity Curtain shall be installed in such a manner as to prevent drift shoreward or downstream. The floatation log shall be securely attached to the fabric in both horizontal and vertical direction. A 5/16-inch cable shall be attached above the floatation members and extend the entire length of each section of silt screen. The 5/16-inch chain shall be sealed on the lower hem for ballast. Connectors shall join the main load line and ballast chain to carry all tensile pressure. The fabric shall be joined for its entire height.

Anchorages shall be installed on the construction side and the pond, swamp, or creek side to maximum stability. Shore anchors shall consist of a post with dead man or approved equal. Stream anchors shall be of sufficient size, type and strength to stabilize the barrier beyond the construction area.

Anchors shall be buoyed to prevent the boom from being pulled under water. Danforth-type anchors shall be used in sandy bottom and heavy kedge type or mushroom anchors on mud bottoms.

The contractor shall be responsible for maintenance of the curtain throughout construction operations.

Submittals: The materials, fabrication, and construction of these components are subject to approval by the Engineer. The Engineer reserves the right to obtain random samples for material testing.

Operation: Removal of entrapped sediment and cleaning of any silt curtain will be paid for according to Article 109.04. The sediment shall be removed as directed by the Engineer during the contract period and disposed of according to Article 202.03.

Installation/Workmanship: workmanship shall be preformed in a skillful and workmanlike manner by qualified personnel under competent supervision and direction and in accordance with the best modern methods for the various trades involved. All material and parts shall be free of all defects in either workmanship or materials that will impair their service.
The fabric shall comply with the following physical properties:

- Grab Tensile Strength — 300 pounds min.
- Equivalent Opening Size (U.S. Std. Sieve) — 60-170
- Seams (All to be heat sealed or sewn)
- Floatation 8-inch diameter solid expanded polystyrene log type or approved equal with approximately 20 lbs/ft. buoyancy. Polystyrene beads or chips shall not be used for floatation.
- Main Load Line. — 5/16 inch cable
- Ballast — 5/16 inch Chain

Method of Measurement: Turbidity Curtain will be measured for payment in place and the area computed in square yards.

Basis of Payment: This work will be paid for at the contract unit price per square yard for TURBIDITY CURTAIN.

ORNAMENTAL SIGN POST

Description: This work will consist of furnishing and installing ornamental sign posts as shown on the plans and as directed by the Engineer.

General: The ornamental sign post shall complement the roadway and pedestrian light poles included with the project. Color and finish shall duplicate that used on the lighting poles.

The Contractor shall submit samples of post and base designs, colors and finishes for approval by the Engineer. Shop drawings of the approved post and base shall be submitted for approval of the Engineer. Shop drawings shall indicate materials, finish and installation method

Materials: The post shall be one-piece construction of aluminum or steel and sized to mount the designated sign or signs at each location. Material shall meet the requirements of ASTM A572 grade 50, high-strength structural steel or ASTM 6063 aluminum. The base shall be constructed of cast aluminum.

Connections for mounting to the sidewalk shall meet requirements of the manufacturer.

Installation: The sign post shall be installed following the manufacturer's requirements, in accordance with the details shown on the plans and at the direction of the Engineer.

Method of Measurement: ORNAMENTAL SIGN POST will be measured for payment as each for each sign post installed.

Basis of Payment: This work will be paid for at the contract unit price each for ORNAMENTAL SIGN POST, which price shall include all necessary materials, excavation, installation, fittings, and all labor, tools, equipment and incidental items as shown on the plans and as specified herein to complete the work.

TEMPORARY TRAFFIC SIGNAL INTERCONNECT

In addition to the requirements of Section 871.00 of the Standard Specifications and the District 1 Traffic Signal Special Provisions, the following requirements shall apply.

Temporary traffic signal interconnect cable shall be provided and installed as shown on the plans or as directed by the Engineer. The temporary interconnect cable shall be of the same type as the existing cable and shall provide at least the same number of conductors and/or optical fibers as the existing cable. The temporary interconnect shall be maintained and remain

operational until the proposed interconnect cable is installed, terminated, tested and approved by the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL INTERCONNECT, which price shall include all materials, equipment and supplies required for the installation of the temporary cable, terminating and connecting the cable in the traffic signal controller cabinets, maintaining the temporary interconnect cable, and removing the temporary interconnect after the proposed interconnect cable has been installed and accepted by the Engineer. The temporary interconnect cable will remain the property of the Contractor after it has been removed.

GENERAL ELECTRICAL REQUIREMENTS
Effective: November 4, 2004

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 the last paragraph of Article 801.06 of the Standard Specifications.

Revise the 7th and 8th paragraphs of Article 801.08 of the Standard Specifications to read:

"Engineer's Stamp. After the Engineer reviews the submittals for conformance with the design concept of the project, the Engineer will stamp the drawings indicating their status as 'Approved', 'Approved-As-Noted', 'Disapproved', or 'Information Only'. Since the Engineer's review is for conformance with the design concept only, it is the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, layout drawings, or other documents by the Department's approval thereof. The Contractor must still be in full compliance with contract and specification requirements.

Resubmittals. All submitted items reviewed and marked 'APPROVED AS NOTED', or 'DISAPPROVED' are to be resubmitted in their entirety with a disposition of previous comments to verify contract compliance at no additional cost to the state unless otherwise indicated within the submittal comments."

Revise Article 801.12 of the Standard Specifications to read:

"Lighting Operation and Maintenance Responsibility. The scope of work shall include the assumption of responsibility for the continuing operation and maintenance 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 801.12 of the Standard Specifications:

"Energy and Demand Charges. The payment of basic energy and demand charges by the electric utility for existing lighting which remains in service will continue as a responsibility of the Owner, unless otherwise indicated. Unless otherwise indicated or required by the Engineer duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously at the Owner's expense and lighting systems shall not be kept in operation during long daytime periods at the Owner's expense. Upon written authorization from the Engineer to place a proposed new lighting system in service, whether the system has passed final acceptance or not, (such as to allow temporary lighting to be removed), the Owner will accept responsibility for energy and demand charges for such lighting, effective the date of authorization. All other energy and demand payments to the utility shall be the responsibility of the Contractor until final acceptance."

Add the following to Section 801 of the Standard Specifications:

"Splicing of Lighting cables. Splices above grade, such as in poles and junction boxes, shall have a waterproof sealant and a heat-shrinkable plastic cap. The cap shall be of a size suitable for the splice and shall have a factory-applied sealant within. Additional seal of the splice shall be assured by the application of sealant tape or the use of a sealant insert prior to the installation of the cap. Either method shall be assured compatible with the cap sealant. Tape sealant shall be applied in not less than one half-lapped layer for a length at least 6.35 mm (1/4-inch) longer than the cap length and the tape shall also be wrapped into the crotch of the splice. Insert sealant shall be placed between the wires of the splice and shall be positioned to line up flush or extend slightly past the open base of the cap.

Lighting Cable Identification. Each wire installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.

Lighting Cable Fuse Installation. Standard fuse holders shall be used on non-frangible (non-breakaway) light pole installations and quick-disconnect fuse holders shall be used on frangible (breakaway) light pole installations. Wires shall be carefully stripped only as far as needed for connection to the device. Over-stripping shall be avoided. An oxide inhibiting lubricant shall be applied to the wire for minimum connection resistance before the terminals are crimped-on. Crimping shall be performed in accordance with the fuse holder manufacturer's recommendations. The exposed metal connecting portion of the assembly shall be taped with two half-lapped wraps of electrical tape and then covered by the specified insulating boot. The fuse holder shall be installed such that the fuse side is connected to the pole wire (load side) and the receptacle side of the holder is connected to the line side.

Grounding of Lighting Systems. All electrical systems, equipment and appurtenances shall be properly grounded in strict conformance with the NEC,

even though every detail of the requirements is not specified or shown. Good ground continuity throughout the electrical system shall be assured. All electrical circuit runs shall have a continuous equipment grounding conductor. IN NO CASE SHALL THE EARTH BE CONSIDERED AS AN ADEQUATE EQUIPMENT GROUNDING PATH. Where connections are made to painted surfaces, the paint shall be scraped to fully expose metal at the connection point and serrated connectors or washers shall be used. Where metallic conduit is utilized as the equipment grounding conductor, extreme care shall be exercised to assure continuity at joints and termination points. No wiring run shall be installed without a suitable equipment ground conductor. Where no equipment ground conductor is provided for in the plans and associated specified pay item, the Contractor is obligated to bring the case to the attention of the Engineer who will direct the Contractor accordingly. Work which is extra to the contract will be paid extra. All connections to ground rods, structural steel, reinforcing steel or fencing shall be made with exothermic welds. Where such connections are made to insulated conductors, the connection shall be wrapped with at least 4 layers of electrical tape extended 152.4 mm (six inches) onto the conductor insulation. Where a ground field of "made" electrodes is provided, the exact locations of the rods shall be documented by dimensioned drawings as part of the Record Drawings. Equipment ground wires shall be bonded, using a splice and pigtail connection, to all boxes and other metallic enclosures throughout the wiring system.

Lighting Unit Identification. Each pole, light tower and underpass light shall be labeled as indicated in the plans to correspond to actual circuiting, and as designated by the Engineer. They shall be installed by the Contractor on each lighting unit pole shaft and on the underpass walls, or piers, as shown in the details. Median-mounted poles shall have two sets of identification labeling oriented to allow visibility from travel in either direction. Lighting Controllers shall also be identified by means of identification decals as described herein. Identification shall be in place prior to placing the equipment in service. Identification of weathering steel poles shall be made by application of letters and numerals as specified herein to an appropriately sized 3.175 mm (1/8-inch) thick stainless steel plate which shall be banded to the pole with two stainless steel bands. Identification of painted poles shall be made by application of letters and numerals as specified herein via an adhesive approved by the paint manufacturer for the application. Identification of luminaires which are not pole mounted, such as underpass luminaires, shall be done using identification brackets. In general, the brackets shall be mounted adjacent to and within one foot of their respective luminaires. The brackets shall be fabricated from 3.175 mm (one-eighth (1/8)) inch aluminum alloy sheet according to the dimensions shown on the plans. The bracket shall be bent so as to present the luminaire identification numbers at a sixty (60) degree angle to the wall. The bracket shall be attached to concrete walls with three (3) 6.35 mm (1/4 inch), self drilling, snap-off type galvanized steel concrete anchors set flush with the wall, or power driven fasteners approved by the Engineer. The brackets shall be offset from the wall with 12.7 mm (1/2") aluminum bushings. The structural steel shall not be drilled to attach the brackets. The luminaire identification numbers shall be applied to the bracket using the method described for identification applied to poles.

Procurement. Materials and equipment shall be the products of established manufacturers, and shall be suitable for the service required. The Contractor is obligated to conduct his own search into the timely availability of the specified equipment and to ensure that all materials and equipment are in strict conformance with the contract documents and that delivery schedules are compatible with project time constraints. **Materials or equipment items which are similar or identical shall be the product of the same manufacturer.** The cost of submittals, certifications, any required samples and similar costs shall not be paid for extra but shall be included in the pay item bid price for the respective material or work.

UL Label. Unless otherwise indicated, materials and equipment shall bear the UL label whenever such labeling is available for the type of material or equipment being furnished.

GROUND ROD

Effective: January 1, 2002

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) Ground Rod	1087.01(b)
(b) Copper Ground Wire	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: June 1, 2003

Revise Article 810.03 of the Standard Specifications to read:

> "Installation. All underground conduit shall have a minimum depth of 700 mm (30-inches) below the finished grade."

Add the following to Article 810.03 of the Standard Specifications:

> "All metal conduit installed underground shall be Rigid Metal Conduit unless otherwise indicated on the plans."

Revise Article 810.05 of the Standard Specifications to read:

> "810.05 Basis of Payment. This work will be paid for at the contract unit price per meter (foot) for CONDUIT IN TRENCH, of the diameter specified, RIGID GALVANIZED STEEL or CONDUIT PUSHED, of the diameter specified, RIGID GALVANIZED STEEL or POLYETHYLENE DUCT, BORED AND PULLED of the type and size specified, or CONDUIT ENCASED, of the type, diameter, and number of raceways wide by the number of raceways high specified."

EXPOSED RACEWAYS
Effective: November 1, 2004

Revise Article 811.03(a)(1) of the Standard Specifications to read:

> "General. Rigid metal conduit installation shall be according to Article 810.03(a)(1). Conduits terminating in junction and pull boxes shall be terminated

with insulated and gasketed watertight threaded NEMA 4X conduit hubs. The hubs shall be Listed under UL 514B. The insulated throat shall be rated up to 105° C. When PVC coated conduit is utilized, the aforementioned hubs shall also be PVC coated."

Add the following to Article 811.03(b) of the Standard Specifications:

"Where PVC coated conduit is utilized, all conduit fittings, couplings and clamps shall be PVC coated. All other mounting hardware and appurtenances shall be stainless steel."

Add the following to Article 811.03(b) of the Standard Specifications:

"The personnel installing the PVC coated conduit must be trained and certified by the PVC coated conduit Manufacturer or Manufacturer's representative to install PVC coated conduit. Documentation demonstrating this requirement must be submitted for review and approval."

"All conduit fittings, couplings and clamps shall be PVC coated. All other mounting hardware and appurtenances shall be stainless steel."

Revise Article 1088.01(a) of the Standard Specifications to read:

"Couplings and fittings shall meet ANSI Standard C80.5 and U.L. Standard 6. Elbows and nipples shall conform to the specifications for conduit. All fittings and couplings for rigid conduit shall be of the threaded type. All conduit hubs shall be gasketed and watertight with an integral O-ring seal."

Revise Article 1088.01(a)(1) of the Standard Specifications to read:

"Rigid Steel Conduit. Rigid steel conduit shall be galvanized and manufactured according to UL Standard 6 and ANSI Standard C 80.1."

Revise Article 1088.01(a)(3) of the Standard Specifications to read:

"a. PVC Coated Steel Conduit. The PVC coated rigid metal conduit shall be UL Listed (UL 6). The PVC coating must have been investigated by UL as providing the primary corrosion protection for the rigid metal conduit. Ferrous fittings for general service locations shall be UL Listed with PVC as the primary corrosion protection. Hazardous location fittings, prior to plastic coating shall be UL listed.

b. The PVC coating shall have the following characteristics:

Hardness:	85+ Shore A Durometer
Dielectric Strength:	400V/mil @ 60 Hz
Aging:	1,000 Hours Atlas Weatherometer

Temperature	The PVC compound shall conform at 0 degrees F. to Federal Specifications PL-406b, Method 2051, Amendment 1 of 25 September 1952 (ASTM D 746)
Elongation:	200%

c. The exterior and interior galvanized conduit surface shall be chemically treated to enhance PVC coating adhesion and shall also be coated with a primer before the PVC coating to ensure a bond between the zinc substrate and the PVC coating. The bond strength created shall be greater than the tensile strength of the plastic coating.

d. The nominal thickness of the PVC coating shall be 1 mm (40 mils). The PVC exterior and urethane interior coatings applied to the conduit shall afford sufficient flexibility to permit field bending without cracking or flaking at temperatures above -1°C (30°F).

e. An interior urethane coating shall be uniformly and consistently applied to the interior of all conduit and fittings. This internal coating shall be a nominal 2 mil thickness. The interior coating shall be applied in a manner so there are no runs, drips, or pinholes at any point. The coating shall not peel, flake, or chip off after a cut is made in the conduit or a scratch is made in the coating.

f. The PVC conduit shall pass the following tests:

Exterior PVC Bond test RN1:

Two parallel cuts 13 mm (1/2 inch) apart and 40 mm (1 1/2 inches) in length shall be made with a sharp knife along the longitudinal axis. A third cut shall be made perpendicular to and crossing the longitudinal cuts at one end. The knife shall then be worked under the PVC coating for 13 mm (1/2 inch) to free the coating from the metal.

Using pliers, the freed PVC tab shall be pulled with a force applied vertically and away from the conduit. The PVC tab shall tear rather than cause any additional PVC coating to separate from the substrate.

Boil Test:

Acceptable conduit coating bonds (exterior and interior) shall be confirmed if there is no disbondment after a minimum average of 200 hours in boiling water or exposure to steam vapor at one atmosphere. The RN1 Bond Test and the Standard Method for Measuring Adhesion by Tape Test shall be utilized.

Exterior Adhesion. In accordance with ASTM D870, a 6" length of conduit test specimen shall be placed in boiling water. The specimen shall be periodically removed, cooled to ambient temperature and immediately tested according to the bond test (RN1). When the PVC coating separates from the substrate, the boil time to failure in hours shall be recorded.

Interior Adhesion. In accordance with ASTM D3359, a 6" conduit test specimen shall be cut in half longitudinally and placed in boiling water or directly above boiling water with the urethane surface facing down. The specimen shall be periodically removed, cooled to ambient temperature and tested in accordance with the Standard Method of Adhesion by Tape Test (ASTM D3359). When the coating disbonds, the time to failure in hours shall be recorded.

Heat/Humidity Test:

Acceptable conduit coating bonds shall be confirmed by a minimum average of 30 days in the Heat and Humidity Test. The RN1 Bond Test and the Standard Method for Measuring Adhesion by Tape Test shall be utilized.

Exterior Adhesion. In accordance with ASTM D1151, D1735, D2247 and D4585, conduit specimens shall be placed in a heat and humidity environment where the temperature is maintained at 150°F (66°C) and 95% relative humidity. The specimens shall be periodically removed and a bond test (RN1) performed. When the PVC coating separates from the substrate, the exposure time to failure in days shall be recorded.

Interior Adhesion. In accordance with ASTM D3359, conduit specimens shall be placed in a heat and humidity environment where the temperature is maintained at 150°F (66°C) and 95% relative humidity. When the coating disbonds, the time to failure in hours shall be recorded.

Add the following to Article 1088.01(a)(4) of the Standard Specifications:

"All liquid tight flexible metal conduit fittings shall have an insulated throat to prevent abrasion of the conductors and shall have a captive sealing O-ring gasket. The fittings shall be Listed under UL 514B. The insulated throat shall be rated up to 105° C."

Revise Article 811.05 of the Standard Specifications to read:

"811.05 Basis of Payment. This work will be paid for at the contract unit price per meter (foot) for CONDUIT ATTACHED TO STRUCTURE, of the diameter specified, RIGID GALVANIZED STEEL or CONDUIT ATTACHED TO STRUCTURE, of the diameter specified, RIGID GALVANIZED STEEL, PVC COATED."

JUNCTION BOX, EMBEDDED IN STRUCTURE, 6"x6"x6"
JUNCTION BOX, EMBEDDED IN STRUCTURE, 4"x4"x3"

DESCRIPTION. This item will consist of furnishing and installing a junction box embedded in a structure as shown on the plans or as directed by the Engineer.

MATERIAL. The junction box must conform to applicable section 813 of the IDOT Standard Specifications.

INSTALLATION. The junction box is to be covered by a liquid tight cover when not in use. Where the junction box is to be embedded, the box must be permanently affixed when concrete is poured surrounding the junction box.

METHOD OF MEASUREMENT. This item will be measured per each installed and completed. Work will consist of attaching the box, wiring the box to the circuit and mounting the box as shown on the plans.

BASIS OF PAYMENT. This work will be paid for at the Contract unit price each for JUNCTION BOX, EMBEDDED IN STRUCTURE, size as indicated, which will be paid in full upon furnishing and installing the junction box as indicated on the plans.

TRENCH AND BACKFILL FOR ELECTRICAL WORK
Effective: January 1, 2002

Revise the first sentence of Article 815.03(a) of the Standard Specifications to read:

> "Trench. Trenches shall have a minimum depth of 760 mm (30 in.) or as otherwise indicated on the plans, and shall not exceed 300 mm (12 in.) in width without prior approval of the Engineer."

Revise Article 1066.05 of the Standard Specifications to read:

> "Underground Cable Marking Tape. The tape shall be 150 mm (6 in.) wide; consisting of 0.2 mm (8 mil) polyethylene according to ASTM D882, and ASTM D2103.
>
> The tape shall be red with black lettering or red with silver lettering reading "CAUTION – ELECTRICAL LINE BURIED BELOW".
>
> The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing."

LUMINAIRE, SODIUM VAPOR, PEDESTRIAN, PHOTO CELL CONTROL, 100 WATT
LUMINAIRE, SODIUM VAPOR, PEDESTRIAN, PHOTO CELL CONTROL, 50 WATT

DESCRIPTION. This item shall consist of furnishing and installing a post top luminaire as specified herein and shown on the contract drawings, including furnishing and installing the pole wire, photo cell control, fuse holders and fusing as specified.

MATERIALS.

Luminaire, General

The luminaire shall meet the physical and photometric requirements specified herein. It shall be optically sealed, mechanically strong and easy to maintain.

The luminaire must meet the appropriate material specifications outlined in Section 821 of the Standard Specifications

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

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

Housing

The housing shall be made of cast aluminum. The finish shall be textured aluminum and shall be colored by the manufacturer by painting with a suitable lacquer, enamel, or other paint. The paint shall be the manufacturer's bronze. The external latches, nuts screws, washers, pins and other parts shall be made of stainless steel. The bottom assembly shall house the ballast assembly.

Lens/Refractor

Unless otherwise specifically indicated, luminaires shall have lenses made of crystal clear, heat, ultraviolet light, and impact resistant acrylic, lightly diffused and secured in place with silicone sealant. The lens shall be held in such a manner as to allow for its expansion and contraction. Where refractors are specifically indicated or permitted, they shall be prismatic impact and heat resistant glass.

Gasketing

When closed for operation, the optical assembly shall be sealed with a gasket against the entry of moisture, dirt and insects. The cover-reflector and socket-reflector junctions shall be sealed against the entry of moisture, dirt and insects with a thick, high density dacron felt gasket, securely attached by mechanical means, such as a retaining lip or by a wide-temperature permanent adhesive in a manner acceptable to the Engineer. Submittal information shall include data relative to gasket thickness and density and the means of securing it in place. An alternative gasket material may be approved by the Engineer. There shall be a provision for thermal breathing. A charcoal filter may be used, subject to approval by the Engineer.

Reflector

The reflector shall be made of aluminum sheet of such grade quality that (a) the reflecting surface shall have a specular finish, (b) the reflection factor of the reflecting surface, as determined by a reflectometer shall not be less that 78%, and (c) the reflecting surface shall have dense protective coating of oxide not less than 7.5 milligrams/in^2, applied by the anodic oxidation process.

The reflector, the refractor or lens, and the entire optical assembly shall not develop any discoloration over the normal life span of the luminaire. An extended warranty over and above the normal warranty, shall be furnished by the manufacturer pertaining to the above said discoloration. The extended warranty shall be furnished in writing guaranteeing replacement, including cost of labor and shipment, free of charge to this contract and to the Owner, of any optical assembly, or any component parts thereof, which, as determined by the Engineer, would develop aforesaid discoloration. The extended warranty shall accompany submittal information.

The luminaire shall be photometrically efficient. Luminaire efficiency, defined by the I.E.S. as "the ratio of luminous flux (lumens) emitted by a luminaire to that emitted by the lamp or lamps used within", shall not be less than 67%. Submittal information shall include published efficiency data. The luminaire shall be a semi-cutoff I.E.S. Type III distribution.

Ballast

The ballast components shall be mounted and fastened within the luminaire housing in a manner such that the components will remain secure and capable of withstanding the pole vibrations. Each component shall be readily removable for replacement.

Unless otherwise indicated, the ballast shall be a high pressure sodium ballast which is designed to ANSI Standards and shall be designed and rated for operation on a 120 volt system.

The Ballast for the 100 watt HPS luminaire shall be a Constant Wattage Autotransformer (CWA) type of circuit. Ballast losses shall be less than 40 (Forty) watts. Power factor at nominal input voltage shall be a minimum of 90%. Regulation as calculated in these specifications shall be 20% for + 10% voltage variation. Minimum starting temperature shall be –30 degrees C.

The 50 watt HPS ballast shall be a high reactance high power factor (HX.HPF) type of circuit and shall operate at 120 volts. Ballast losses shall be less than 18 eighteen watts. Power factor at nominal input voltage shall be a minimum of 90%. Regulation as calculated in these specifications shall be 20% for + 5% voltage variation. Minimum starting temperature shall be –30 degrees C.

The 100 watt HPS lamp shall be a nominal 55 volt lamp. The 50 watt HPS lamp shall be a nominal 52 volt lamp. Lamps shall meet the requirements of the Standard Specifications.

Ballast shall meet the addition requirements of these special provisions as indicated under luminaire. The ballast windings shall be adequately impregnated and treated for protection against the entrance of moisture insulated with Class H insulation, and able to withstand the NEMA standard dielectric test. The ballast shall include an electronic starting assembly.

Unless otherwise indicated, the beam of maximum candlepower for luminaires specified or shown to have "medium" distribution shall be at 69 degrees from horizontal + 2½ degrees. Submittal information shall identify the angle.

Submittal information shall include:

a. Descriptive literature
b. Isofootcandle chart of horizontal footcandles
c. Utilization curve
d. Isocandela diagram
e. luminaire classification per ANSI designation
f. Candlepower values at ever degrees as indicated in IESNA
g. Candlepower tables is to be provided on 3 ½ diskette in the I.E.S. format
h. Volt watt trace
i. Crest factor
j. Ballast losses
k. Initial starting voltage
l. Regulation

INSTALLATION. Luminaire shall be carefully installed in accordance with the luminaire manufacturer's recommendations and in accordance with the design requirements represented on the plans.

Unless otherwise indicated, luminaire horizontal axes shall be installed parallel to the plane of the walkway. After installation, if a nighttime check of the lighting indicates that any luminaires are mis-aligned, by visual inspection or other means, by the Engineer, the mis-aligned luminaires shall be corrected by the Contractor at no additional cost to the contract. Also, should the photometric results of the luminaire be such that, in the judgement of the Engineer, a tilt adjustment is warranted on selected luminaires, this adjustment shall be made by the Contractor at no additional cost to the Contract.

Luminaires should not be installed before they are fully approved. Where independent testing is required, full approval is not attained until complete test results, demonstrating compliance with specified requirements, have been reviewed and accepted by the Engineer. NO payment shall be made for luminaires installed without full approval.

This item shall be complete with lamps, pole wire, fuse holders photo cell control and fusing, as specified under Basic Material and Methods, elsewhere herein.

BASIS OF PAYMENT. This item will be paid for at the contract unit price for LUMINAIRE, SODIUM VAPOR, PEDESTRIAN, PHOTO-CELL CONTROL, 100 WATT OR LUMINAIRE, SODIUM VAPOR PEDESTRIAN, PHOTO-CELL CONTROL, 50 WATT which shall be payment

in full for furnishing, installing, connecting, aiming and testing the unit once it is complete in place.

UNDERPASS LUMINAIRE, FLUORESCENT, 60 WATT
UNDER STAIR LUMINAIRE, INCANDESCENT, 75 WATT

DESCRIPTION. This item will consist of furnishing and installing underpass lighting units, complete with supports and hardware, identification brackets and decals, and mounting accessories at the location shown on the plans, or as directed by the Engineer. Lighting units shall be vandal resistant, and constructed of stainless steel or other material approved by the Engineer. Lenses shall be vandal resistant and secured by tamper proof hardware. The fluorescent luminaire shall be furnished complete with an electronic F48T8/HO Program-Start ballast, capable of starting and operating the lamp at a temperature of –20 degrees F. The appropriate T8HO lamp with color temperature of 3000K and CRI of 80 or better shall also be included. The incandescent luminaire shall be provided with a 75 Watt "Rough Service" A-lamp.

MATERIAL. The lighting unit is to be installed in stainless steel housing and lens frame as outlined under Section 1067 of the Standard Specifications. The luminaire must also meet the appropriate material specifications outlined in Section 821 of the Standard Specifications.

INSTALLATION. The lighting unit is to be mounted under the bridge adjacent to the abutment wall, as outlined in the plans or as directed by the Engineer. Unit shall be spaced off the structure by use of spacers as outlined in the Specifications.

METHOD OF MEASUREMENT. This work will be measured per each unit installed and completed. All wiring to the underground feeder cable, including splices, will be included in this measurement.

BASIS OF PAYMENT. This work will be paid for at the contract unit price each for a UNDERPASS LUMINAIRE, FLUORESCENT, 60 WATT or UNDERSTAIR LUMINAIRE, INCANDESCENT, 75 WATT which will be paid in full for furnishing, installing, connecting and testing the unit once it is complete in place.

LIGHT POLE, ALUMINUM, 30 FT. M.H., 8 FT. MAST ARM
LIGHT POLE, ALUMINUM, 14 FT., POST TOP, WITH PLANTER ARMS
LIGHT POLE, ALUMINUM, 14 FT., POST TOP
LIGHT POLE, ALUMINUM, 10 FT., POST TOP

DESCRIPTION. This pole shall consist of furnishing, installing and setting plumb an aluminum pole, mast arm, and planter arm (as needed) and mast arm or post top connector to which a street light luminaire shall be attached. The pole shall be set on a separate foundation and affixed with anchor rods or bolts. Each pole shall be equipped with a factory installed vibration damper.

MATERIAL. The poles used must be as outlined in the plans, and as approved by both the Engineer and the City of Batavia. The pole must also meet the applicable requirements of IDOT Standard Specification 830. The pole must also be UL listed.

INSTALLATION. The pole shall be installed on a concrete foundation or bridge deck mounted designed for the particular pole usage. A GFI protected festoon outlet shall be installed on each 30 FT. M.H pole as shown on the plans. The outlet installation shall comply with NEC Article 406.8(B)(2)(a). The outlet cover shall be weather proof whether or not a plug cap is inserted. The bolt covers and handhole cover must be securely attached. The pole must be properly orientated in relation to the street, so that the arm(s) will be perpendicular to the direction of the roadway. The handhole shall be located on the side of the pole AWAY FROM oncoming traffic.

METHOD OF MEASUREMENT. This pole shall be measured per unit installed and completed. Work will consist of attaching the pole to the foundation, application of nut covers, attachment of handhole door, and plumbing of the pole.

BASIS OF PAYMENT. This work shall be paid for at the Contract unit price each for LIGHT POLE, ALUMINUM, 30 FT. M.H., 8 FT. MAST ARM,
LIGHT POLE, ALUMINUM, 14 FT., POST TOP, WITH PLANTER ARMS,
LIGHT POLE, ALUMINUM, 14 FT.
LIGHT POLE, ALUMINUM, 10 FT.
which will be paid in full for furnishing and installing the pole complete in place.

GFI RECEPTACLE AND BOX, 120V

DESCRIPTION. This item shall consist of furnishing and installing a 120V GFI receptacle in a box mounted in the ground as shown on the plans or as directed by the Engineer.

MATERIAL. All materials used shall be liquid tight and adhere to the National Electric Code. Cable used must also adhere to Section 873 of the Standard Specifications. The receptacle is to be mounted in a box, which must conform with applicable sections of 813 of the IDOT Standard Specifications.

INSTALLATION. The receptacle shall be covered by a weatherproof while in use type cover when not in use. Where the receptacle is to be ground mounted, the box shall be permanently affixed to a spike as indicated in the plans, which will be driven into the ground. The cost of this spike is incidental to this item and no additional compensation will be allowed.

METHOD OF MEASUREMENT. This item will be measured per unit installed and completed. Work will consist of attaching the receptacle to the box, wiring the box to the circuit and mounting the box as shown on the plans.

BASIS OF PAYMENT. This work shall be paid for at the Contract unit price each for GFI RECEPTACLE AND BOX, 120V which will be paid in full upon furnishing and installing the receptacle and box as indicated on the plans.

LIQUIDTIGHT FLEXIBLE METAL CONDUIT, ¾"

DESCRIPTION. This item shall consist of furnishing and installing liquid tight metallic conduit in the two north bench structures. The purpose of this conduit is to shield the control cables for pier lighting (done by others) from the magnetic field created by the line voltage conductors run in the common raceway through the bench structure while at the same time facilitating installation of the benches.

MATERIAL. All materials used shall be liquid tight and adhere to the National Electric Code as well as applicable portions of Section 1088 of the Standard Specifications. Conduit must also adhere to Section 811 of the Standard Specifications. The conduit is to be connected to rigid conduit with fittings which must conform to applicable sections of 811 of the Standard Specifications. The conduit shall also be approved by the City of Batavia.

INSTALLATION. The conduit shall be fastened firmly to the conduit stubbed out from the ground, as shown on the plans prior to the bench installation. As the bench unit is being lowered the conduit shall be pulled up the 6" raceway within the bench unit with a pull wire or other means. The final conditions shall be as shown on the plans.

METHOD OF MEASUREMENT. This item will be measured per unit foot. Conduit fittings are considered incidental to this item, no additional compensation will be allowed.

BASIS OF PAYMENT. This work shall be paid for at the Contract unit price foot for LIQUIDTIGHT FLEXIBLE METAL CONDUIT, ¾" which will be paid in full upon furnishing and installing the conduit as indicated on the plans.

MAINTAIN LIGHTING SYSTEM

DESCRIPTION. This item shall consist of maintaining the lighting system on Wilson Street between Island Avenue / Shumway Drive and Illinois Route 25. This includes all circuits and associated equipment served by the existing lighting transformer at the alley south of Shumway Drive and Wilson Street intersection as well as the lighting transformer located northeast of the project limits, as outlined in the city of Batavia plans. The Contractor is required to follow the applicable parts of Section 801 of the Standard Specification of Road and Bridge Construction, dated January 1, 2002 of the Illinois Department of Transportation.

SCOPE OF MAINTENANCE. The Contractor shall be responsible for the maintenance of new, existing lighting, and temporary lighting (as shown in the plans) during the construction of the project. Current lighting levels must be maintained throughout the construction period. It is the Contractor's responsibility to determine the lighting levels and provide that level of lighting on active roadways and sidewalks during the various phases and staging of traffic flow. This can be accomplished by phased installation of new equipment as outlined in the lighting staging plans.

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 to be broken or missing, defective or malfunctioning. Megger and load readings must be taken for all existing circuits, which will remain in place or are to 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 must be reviewed and approved by the Engineer and a record of the inventory must be submitted to the Engineer. All systems transferred to the Contractor for maintenance during construction must be returned at the end of construction in complete, fully operating condition.

The scope of work shall include the assumption of responsibility for the continuing operation of existing, temporary, and proposed lighting systems as well as all appurtenances affected by the work as may be specified elsewhere herein. Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment 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. Where there is existing lighting within the project limits and prior to the start of activities at the site, the Contractor must schedule a formal transfer to the contractor's maintenance via the Engineer. Failure to do so does not relieve the Contractor of the maintenance responsibility specified herein and such failure obligates the Contractor to correct deficiencies in the existing system at his own expense.

Effective the date the Contractor's activities (electrical or otherwise) at the job site begin, the Contractor shall be responsible for the proper operation and maintenance of all existing lighting systems and temporary lighting which may be affected by the work for which maintenance has been transferred to the Contractor and all newly constructed lighting systems under the contract, until final acceptance or as otherwise determined by the Engineer.

Except as specified herein, the Contractor's responsibility includes all applicable responsibilities of electrical maintenance for this project. These responsibilities include lighting units, cable and conduit runs, electrical services and lighting controls.

DAMAGE RESPONSE. The Contractor shall respond to damage calls for all system components being maintained and/or installed (including, but not limited to pole knockdowns, circuit outages and controller outages) within one hour after notification and provide immediate corrective action. The Contractor must also repair other outages within 5 days of notification or his own discovery. The Contractor shall stock a sufficient amount of material and equipment to provide temporary and permanent repairs. Any damage to the lighting system from any cause whatsoever must be repaired or replaced in kind with equipment in the same or better condition than before the incident by the Contractor at no additional cost to the contract, all as approved by the Engineer. If the Contractor does not provide immediate corrective action within the specified time frames, or fails to complete repairs in a timely manner the Engineer may direct other forces to perform the work. These charges will be directly billed to the Contractor. Responsibilities shall also include weekly night-time patrol of the lighting system, with deficiencies corrected within 24 hours of the patrol.

METHOD OF MEASUREMENT. Maintain lighting system will not be measured for payment.

BASIS OF PAYMENT. This item will be paid for at the Contract lump sum price for MAINTAIN LIGHTING SYSTEM which price will be payment in full for maintaining the existing and proposed lighting system as described above.

LUMINAIRE
Effective: August 1, 2004

Add the following to first paragraph of Article 1067(a)(3) 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(a)(5)a. of the Standard Specifications:

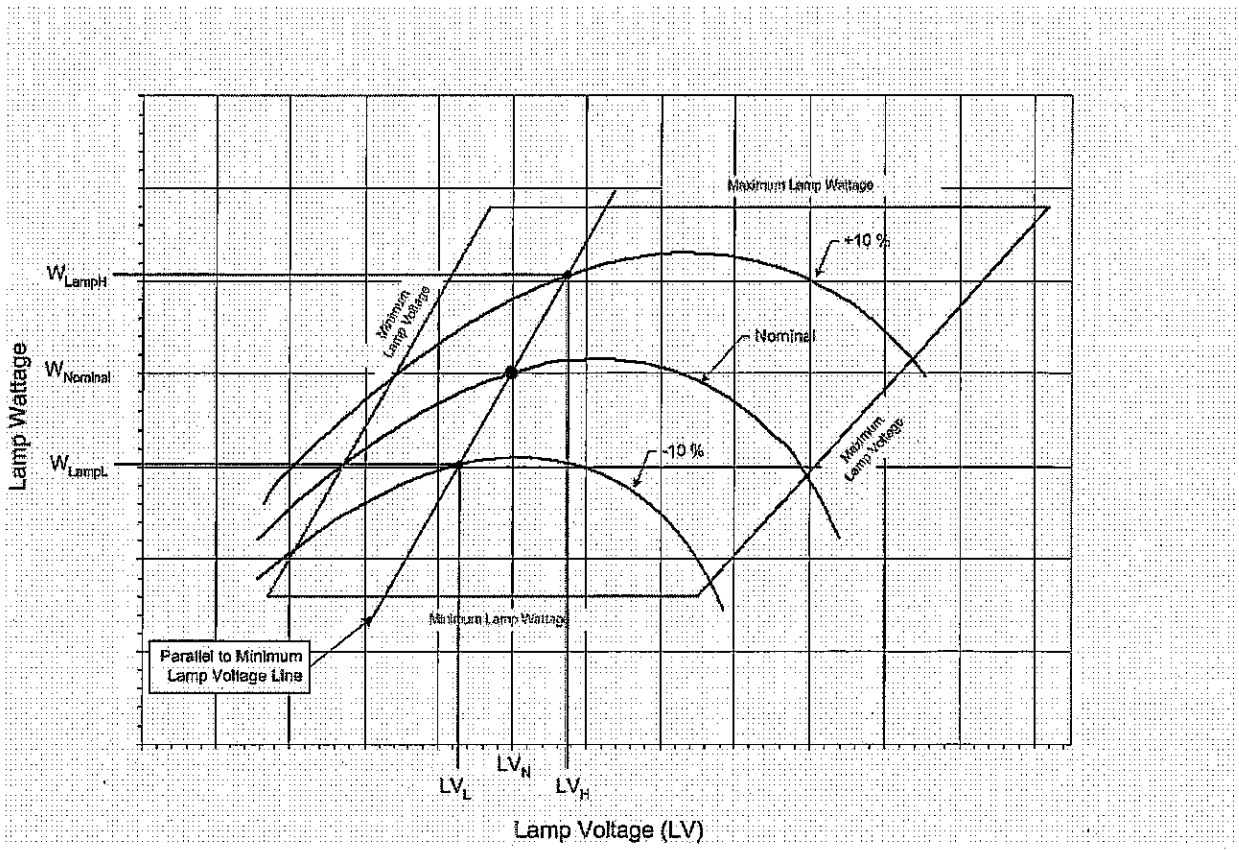
"The ballast shall be a High Pressure Sodium, high power factor, constant wattage auto-regulator, lead type (CWA) for operation on a nominal 120 volt system."

Revise the second sentence of the second paragraph of Article 1067(a)(5)c. of the Standard Specifications:

"The ballast shall be designed to ANSI Standards and shall be designed and rated for operation on a nominal 120 volt system. The ballast shall provide positive lamp ignition at the input voltage of 108 volts. It shall operate the lamp over a range of input voltages from 108 to 132 volts without damage to the ballast. It shall provide lamp operation within lamp specifications for rated lamp life at input design voltage range. Operating characteristics shall produce output regulation not exceeding the following values:

Nominal Ballast Wattage	Maximum Ballast Regulation
750	25%
400	26%
310	26%
250	26%
150	24%
70	18%

For this measure, regulation shall be defined as the ratio of the lamp watt difference between the upper and lower operating curves to the nominal lamp watts; with the lamp watt difference taken within the ANSI trapezoid at the nominal lamp operating voltage point parallel to the minimum lamp volt line:



$$\text{Ballast Regulation} = \frac{W_{LampH} - W_{LampL}}{W_{LampN}} \times 100$$

where:
W_{LampH} = lamp watts at +10% line voltage when Lamp voltage = LV_H
W_{LampL} = lamp watts at - 10% line voltage when lamp voltage = LV_L
W_{lampN} = lamp watts at nominal lamp operating voltage = LV_N

Wattage	Nominal Lamp Voltage, LV_N	LV_L	LV_H
750	120v	115v	125v
400	100v	95v	105v
310	100v	95v	105v
250	100v	95v	105v
150	55v	50v	60v
70	52v	47v	57v

"

Revise the third sentence of the second paragraph of Article 1067(a)(5)c. of the Standard Specifications to read:

"Ballast losses, based on cold bench tests, shall not exceed the following values:

Nominal Ballast Wattage	Maximum Ballast Losses
750	14.0%
400	17.0%
310	19.0%
250	19.0%
150	26.0%
70	34.0%

Ballast losses shall be calculated based on input watts and lamp watts at nominal system voltage as indicated in the following equation:

$$\text{Ballast Losses} = \frac{W_{Line} - W_{Lamp}}{W_{Lamp}} \times 100$$

where:
W_{line} = line watts at nominal system voltage
W_{lamp} = lamp watts at nominal system voltage"

Add the following to Article 1067(a)(5)c. of the Standard Specifications:

"Ballast output to lamp. At nominal system voltage and nominal lamp voltage, the ballast shall deliver lamp wattage with the variation specified in the following table. Example: *For a 400w luminaire, the ballast shall deliver 400 watts ±2.5% at a lamp voltage of 100v for the nominal system voltage of 120v which is the range of 390w to 410w.*"

Nominal Ballast Wattage	Output to lamp variation
750	± 2.0%
400	± 2.5%
310	± 2.5%
250	± 4.0%
150	± 4.0%
70	± 4.0%

Add the following to Article 1067(a)(5)c. of the Standard Specifications:

"Ballast output over lamp life. Over the life of the lamp the ballast shall produce average output wattage of the nominal lamp rating as specified in the following table. Lamp wattage readings shall be taken at 5-volt increments throughout the ballast trapezoid. Reading shall begin at the lamp voltage (L_V) specified in the table and continue at 5 volt increments until the right side of the trapezoid is reached. The lamp wattage values shall then be averaged and shall be within the specified value of the nominal ballast rating. Submittal documents shall include a tabulation of the lamp wattage vs. lamp voltage readings. Example: *For a 400w luminaire, the averaged lamp wattage reading shall not exceed the range of ±3% which is 388 to 412 watts*"

Nominal Ballast Wattage	LV Readings begin at	Maximum Wattage Variation
750	110v	± 3%
400	90v	± 3%
310	90v	± 3%
250	90v	± 4%
150	50v	± 4%
70	45v	± 5%

Revise the first paragraph of Article 1067(a)(7) of the Standard Specifications to read:

"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.*"

Add the following to Article 1067(a)(7) of the Standard Specifications:

"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"

Revise Article 1067(a)(7)a. of the Standard Specifications to read:

"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."

Revise Article 1067(a)(7)b. of the Standard Specifications to read:

"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."

Add the following to Article 1067(a)(7)c. of the Standard Specifications:

"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 product 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."

Add the following to Article 1067(a)(7) of the Standard Specifications:

"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."

Revise the sixth paragraph of Article 1067(c)(1)a. of the Standard Specifications to read:

"The beam of maximum candlepower for luminaires specified or shown to have a 'medium' distribution shall be at 70 degrees from the horizontal ± 2.5 degrees. Submittal information shall identify the angle."

Revise Article 1067.02(a)(1) of the Standard Specifications to read:

"The lamps shall be of the clear type and shall have a color of 2050° to 2100° Kelvin."

Add the following table(s) to Article 1067 of the Standard Specifications:

ROADWAY

IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE

GIVEN CONDITIONS		
ROADWAY DATA	Pavement Width	50 (ft)
	Number of Lanes	5
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
LIGHT POLE DATA	Mounting Height	30 (ft)
	Mast Arm Length	8 (ft)
	Pole Set-Back From Edge of Pavement	2 (ft)
LUMINAIRE DATA	Lamp Type	HPS
	Lamp Lumens	28000
	I.E.S. Vertical Distribution	Medium
	I.E.S. Control Of Distribution	Full-Cutoff
	I.E.S. Lateral Distribution	Type III
	Total Light Loss Factor	0.70
LAYOUT DATA	Spacing	140 (ft)
	Configuration	Opposite
	Luminaire Overhang over edge of pavement	6 (ft)

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

PERFORMANCE REQUIREMENTS			
ILLUMINATION	Ave. Horizontal Illumination, E_{AVE}	23 Lux (Min)	26 Lux (Max)
	Uniformity Ratio, E_{AVE}/E_{MIN}	1.8:1 (Max)	
LUMINANCE	Average Luminance, L_{AVE}	1.85 Cd/m^2 (Min)	1.90 Cd/m^2 (Min)
	Uniformity Ratio, L_{AVE}/L_{MIN}	1.9:1 (Max)	
	Uniformity Ratio, L_{MAX}/L_{MIN}	3.0:1 (Max)	
	Veiling Luminance Ratio, L_V/L_{AVE}	.19:1 (Max)	

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

Add the following table(s) to Article 1067 of the Standard Specifications:

WALKWAY

IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE

GIVEN CONDITIONS		
ROADWAY DATA	Pavement Width	10 (ft)
	Number of Lanes	Sidewalk
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
LIGHT POLE DATA	Mounting Height	15 (ft)
	Mast Arm Length	0 (ft)
	Location from face of Curb	2 (ft)
LUMINAIRE DATA	Lamp Type	HPS
	Lamp Lumens	9500
	I.E.S. Vertical Distribution	Medium
	I.E.S. Control Of Distribution	Semicutoff
	I.E.S. Lateral Distribution	Type II
	Total Light Loss Factor	0.70
LAYOUT DATA	Spacing	140 (ft)
	Configuration	Single Sided
	Luminaire Overhang over edge of pavement	2 (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			
ILLUMINATION	Ave. Horizontal Illumination, E_{AVE}	5.4 Lux (Min)	6 Lux (Max)
	Uniformity Ratio, E_{AVE}/E_{MIN}	6:1 (Max)	
LUMINANCE	Average Luminance, L_{AVE}	0.90 Cd/m^2 (Min)	0.97 Cd/m^2 (Min)
	Uniformity Ratio, L_{AVE}/L_{MIN}	6:1 (Max)	
	Uniformity Ratio, L_{MAX}/L_{MIN}	35:1 (Max)	
	Veiling Luminance Ratio, L_V/L_{AVE}	1.25:1 (Max)	

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

STAINLESS STEEL JUNCTION BOX
Effective: January 1, 2002

Revise the second sentence of the seventh paragraph of Article 1088.04 of the Standard Specifications to read:

"The gasket shall be extruded directly onto the junction box cover."

TREE, GLEDITSIA TRIACANTHOS INERMIS SKYLINE (SKYLINE THORNLESS COMMON HONEYLOCUST)

TREE, GINKGO BILOBA (AUTUMN GOLD)

DESCRIPTION. This work consists of furnishing all labor, materials, tools, and equipment required to furnish, plant and maintain each TREE, GLEDITSIA TRIACANTHOS INERMIS SKYLINE (SKYLINE THORNLESS COMMON HONEYLOCUST) and each TREE, GINKGO BILOBA (AUTUMN GOLD) as shown in the Plans and as directed by the Engineer.
This work must be performed in accordance with Sections 253 of the Standard Specifications and as directed by the Engineer.

MATERIALS. Provide materials in accordance with 253 and per below:

A. Tree -Single stem shade tree, min. 3" caliper, balled and burlapped, with straight trunk, well-balanced crown, and intact leader, of height and caliper indicated, complying with applicable requirements of ANSI Z60.1 for type of tree required and obtained from a commercial nursery that is an active member of the Illinois Nurserymen's Association or other regional source approved by the Engineer
B. Amended Soil Blend:
    a. Topsoil 30 –35%
    b. Canadian Sphagnum peat Moss 15-20 %
    c. Aged Southern Pine Bark Fines 15-30%
    d. Organic Compost 10-15%
    e. Coarse Sand 10-20%
    f. Iron Sulfate: 1.5-lbs per cubic yard
    g. Slow Release Fertilizer: 6.0 lbs per cubic yard; 14-14-14
C. Mulch – Apply 3 in. average thickness of organic mulch
D. Maintenance during period of establishment

INSTALLATION. Tree must be planted in location indicated on plans, after preparation of tree pit. Install materials in accordance with 253 or per engineer.
Coordinate installation with installation of concrete sidewalks, tree grate and frame, electrical outlet and irrigation system.

METHOD OF MEASUREMENT. This work will be measured for each TREE, GLEDITSIA TRIACANTHOS INERMIS SKYLINE (SKYLINE THORNLESS COMMON HONEYLOCUST) and each TREE, GINKGO BILOBA (AUTUMN GOLD) planted and completed. All materials required to complete planting shall be included in this measurement.

BASIS OF PAYMENT. This work will be paid for at the contract unit price each for

TREE, GLEDITSIA TRIACANTHOS INERMIS SKYLINE (SKYLINE THORNLESS COMMON HONEYLOCUST) and each TREE, GINKGO BILOBA (AUTUMN GOLD) which will be paid for in full for furnishing, planting and maintenance once it is complete in place.

TREE GRATE

DESCRIPTION. This work consists of furnishing all labor, materials, tools, and equipment required to furnish and install TREE GRATE as directed by the Engineer.

SUBMITTALS: The Contractor shall submit product cut sheets for approval by the Engineer.

SUPPLIERS: The tree grates shall be 36" x 72" and selected from the following models and manufacturers:

URBAN ACCESSORIES
Model: OT TITLE-24
Reese Recreation | Contact: Terry
800-222-2268
847-398-2992
Fax 847-398-1433

FAIRWEATHER SITE FURNISHINGS
Model: LPT Series
1525 Vivian Court | Port Orchard, WA 98367-6400
800-323-1798
360-895-2626
FAX: 360-895-1284

CREATIVE PIPE, INC.
Scapeworks, LLC Tree Grates
Model: NP-5-N: Nepenthe Tree Grate
P.O. Box 2458 | Rancho Mirage, California 92270-1087 USA
800.644.8467
760.340.5555
Fax: 760.340.5883

FABRICATION AND INSTALLATION. All castings shall be manufactured true to pattern: component parts shall fit together in a satisfactory manner. They shall be of uniform quality: free from blowholes, porosity, hard spots, shrinkage distortion or other defects. They shall be smooth and well cleaned by shotblasting.

Installation shall be as shown on the plans or as directed by Engineer. Grate frames shall be square and aligned with the adjacent surfaces for flush grate placement.

Coordinate Tree grate installation with concrete sidewalks, electrical outlets, Irrigation System and Tree installation.

METHOD OF MEASUREMENT. This work will be measured for each TREE GRATE installed. All materials required to complete installation shall be included in this measurement.

BASIS OF PAYMENT. This work will be paid for at the contract unit price each for TREE GRATE, which price will be payment in full for all labor, materials, fabrication, transportation, erection, tools, and all other appurtenant work necessary to complete this item.

CONCRETE PAVERS

Description: This work shall consist of furnishing all materials, labor and equipment necessary for the installation of Concrete Pavers of the type and size as shown on the Plans

Related Sections:

Section: 424 – Portland Cement Concrete Sidewalk

Section: 606 – Concrete Gutter, Curb, Median and Paved Ditch

References:

American Society of Testing and Materials (ASTM) (latest edition):

1. C 33 Specification for Concrete Aggregates.
2. C 136 Method for Sieve Analysis for Fine and Coarse Aggregate.
3. C 140 Sampling and Testing Concrete Masonry Units.
4. C 144 Standard Specifications for Aggregate for Masonry Mortar.
5. C 936 Specifications for Solid Interlocking Concrete Paving Units.
6. C 979 Specification for Pigments for Integrally Colored Concrete.
7. C 387 Specification for Packaged, Dry, Combined Materials for Mortar and Concrete

Quality Assurance: Installation shall be by a contractor and crew with at least one year of experience in placing interlocking concrete pavers on projects of similar nature or dollar cost.

The Contractor shall conform to all local and state licensing and bonding requirements.

Submittals: The following shall be submitted for approval by the Engineer prior to the construction of the mock-ups:

1. Shop or product drawings and product data.
2. Full size samples of concrete paving units to indicate surface texture, color and shape selections. Color will be selected by Engineer from the manufacturer's available colors.
3. Sieve analyses for grading of bedding and joint sand
4. Test results from an independent testing laboratory for compliance of paving unit requirements to ASTM C 936 or other applicable requirements.
5. The layout, pattern, and relationship of paving joints to fixtures and project formed details.

Mock-ups: Two 7 ft. x 7 ft. paver areas shall be installed following the procedures described in the Installation section of this specification and as directed by the Engineer. The Contractor shall provide a suitable location for the mock-ups subject to the approval of the Engineer.

This area will be used to determine the amount that the pavers settle into bedding sand after compaction, joint sizes, lines, laying pattern(s), color(s), and texture of the project.

One mock-up will use Concrete Pavers, Type A placed as shown on the Plans.

One mock-up will use Concrete Pavers, Type B placed as shown on the plans with a 2' strip of Concrete Pavers, Type C placed along one edge of the mock-up. A 2' x 2' section of the Concrete Pavers, Type C shall be placed using a Detectable Warning paver

These areas shall be the standard from which the work will be judged.

Delivery, Storage and Handling:

1. Concrete pavers shall be delivered to the site in steel banded, plastic banded, or plastic wrapped cubes capable of transfer by fork lift or clamp lift. The pavers shall be unloaded at the job site in such a manner that no damage occurs to the product.
2. Bedding and joint sand shall be covered with a secure waterproof covering to prevent exposure to rainfall or removal by wind.
3. Delivery and paving schedules shall be coordinated in order to minimize interference with normal use of buildings adjacent to paving.

Installation Conditions:

Bedding sand and concrete pavers shall not be placed during heavy rain or snowfall or over frozen base materials. Bedding sand shall not be placed when frozen. Polymeric joint sand shall not be placed on wet pavers or when rain is expected before the compaction is completed.

Materials:

Concrete pavers shapes, colors, overall dimensions, thickness of the pavers and surface textures shall be as shown on the Plans, as described herein and as approved by the Engineer.

Concrete Pavers, Type A shall have a smooth surface texture similar to the concrete pavers on the existing Batavia Riverwalk.

Concrete Pavers, Type B shall have a flagstone-type surface texture on the top surface of the pavers. The texture should carry over the top edges of the paver such that the top portion of the sides is textured similar to the top of the paver.

Concrete Pavers, Type C shall have a tumbled appearance along all corners of the paver block

Pavers shall meet the minimum material and physical properties set forth in ASTM C 936, Standard Specification for Interlocking Concrete Paving Units and as follows. Efflorescence shall not be a cause for rejection.

1. Average compressive strength 8000 psi (55MPa) with no individual unit under 7,200 psi (50 MPa).
2. Average absorption of 5% with no unit greater than 7% when tested according to ASTM C 140.

3. Resistance to 50 freeze-thaw cycles, when tested according to ASTM C 67, with no breakage greater than 1.0% loss in dry weight of any individual unit. This test method shall be conducted not more than 12 months prior to delivery of units.
4. Pigment in concrete pavers shall conform to ASTM C 979. ACI Report No. 212.3R provides guidance on the use of pigments.

Concrete base: The bedding sand shall be placed on a concrete base constructed in accordance with the requirements of Section 424 – PCC Sidewalk and as shown on the Plans.

Bedding Sand:

The bedding sand shall be mixed with Portland cement, Type I meeting the requirements of ASTM C 150 and Article 1001 of the Standard Specifications. The bedding sand shall be uniformly mixed with the Portland cement at the ratio of: 3 parts bedding sand to 1 part Portland cement prior to placing on the prepared base.

The bedding sand shall be clean, non-plastic, and free from deleterious or foreign matter. It can be natural or manufactured from crushed rock. Do not use limestone screenings or stone dust that do not conform to the grading requirements in Table 1. The bedding sand shall conform to the grading requirements of ASTM C 33 as shown in Table 1.

Table 1
Bedding Sand
Grading Requirements

ASTM C 33	
Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (600 µm)	25 to 60
No. 50 (300 µm)	10 to 30
No. 100 (150 µm)	2 to 10

Bedding sand shall not be used for joint sand.

Polymeric Joint Sand: The polymeric joint sand shall conform to the requirements of ASTM C 387 and to the grading requirements of ASTM C 144 as shown in Table 2 below:

Table 2
Joint Sand
Grading Requirements

ASTM C 144		
Sieve Size	Natural Sand Percent Passing	Manufactured Sand Percent Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 - 100	95 to 100
No. 16 (1.18 mm)	70 - 100	70 to 100
No. 30 (600 µm)	40 - 75	40 to 75
No. 50 (300 µm)	10 - 35	20 to 40
No. 100 (150 µm)	2 - 15	10 to 25
No. 200 (75 µm)	0	0 to 10

Edge Restraints: The provision of suitable edge restraints is critical to the satisfactory performance of interlocking concrete block pavement. The pavers must abut tightly against the restraints to prevent rotation under load and any consequent spreading of joints. The restraints must be sufficiently stable that, in addition to providing suitable edge support for the paver units, they are able to withstand the impact of temperature changes, vehicular traffic and/or snow removal equipment.

Curbs, gutters or curbed gutter, constructed in accordance with Section 606 of the Standard Specifications and as shown on the Plan will be considered as acceptable edge restraints for installation of the concrete pavers.

Execution:

The Contractor shall verify the proper installation of concrete base in terms of the locations and the elevations as shown on the Plans.

The Contractor shall verify the proper installation of the concrete curbing in terms of locations and elevations as shown on the Plans.

Verify that the base is dry, uniform, even and ready to support sand, pavers and imposed loads.

Beginning of bedding sand and paver installation shall signify the Contractor's acceptance of base and edge restraints.

Site Preparation:

The site must be swept of all dirt, debris and other objectionable materials to the satisfaction of the Engineer

Concrete Base and Edge Restraint Installation:

The concrete base and curbs shall be placed in accordance with the requirements of Section 424 of the Standard Specifications and as shown on the Plans.

Paver Installation: The Contractor shall spread the bedding sand evenly over the base course and screed to a nominal 1 in. (25 mm) thickness, not exceeding 1 ½ in. (40 mm) thickness. The screeded sand shall not be disturbed. All bedding sand in disturbed areas shall be removed, swept clean and re-spread. Sufficient sand shall be placed in order to stay ahead of the laid pavers. Do not use the bedding sand to fill depressions in the base surface.

The spread sand shall be carefully maintained in a loose condition, and protected against incidental compaction, both prior to and following screeding. Any incidentally compacted sand or screeded sand left overnight, shall be loosened before further paving units are placed. Sand shall be lightly screeded in a loose condition to the predetermined depth, only slightly ahead of the paving units. Under no circumstances shall the sand be screeded in advance of the laying face to an extent to which paving will not be complete on that day.

Screeded sand shall be fully protected against incidental compaction, including compaction by rain. Any screeded sand which is incidentally compacted prior to laying of the paving unit, shall be removed and brought back to profile in a loose condition. Neither pedestrian nor vehicular traffic shall be permitted on the screeded sand.

The Contractor shall screed the bedding sand using screed rails and boards.

The Contractor shall inspect all pavers for color distribution and damage before installation. Pavers shall be free of foreign material before installation. All chipped, damaged or discolored pavers shall be replaced.

Initiation of paver placement shall be deemed to represent the Contractor's acceptance of the pavers.

Paving units shall be installed from a minimum of 3 bundles simultaneously drawing the paver vertically rather than horizontally.

The pavers shall be laid in the pattern(s) as shown on the Plans. String lines or chalk lines on bedding sand shall be used to hold all pattern lines true.

Pavers shall be laid so that all edges are flush with adjacent pavers.

Joints between the pavers, on average, shall be between 1/16 in. and 1/8 in. (2 mm to 4 mm) wide. In order to maintain the desired pattern, joint spacing must be consistent. This spacing must also be provided for the first row abutting the edge restraint.

Installing pavers too tightly may lead to chipping at the edges.

Gaps at the edges of the paved area shall be filled with cut pavers.

Pavers to be placed along the edge shall be cut with a double blade paver splitter or masonry saw.

The use of infill concrete or discontinuities in patterns will not be permitted unless adjacent to drains, manholes or other utility items.

Upon completion of cutting, the area must be swept clean of all debris to facilitate inspection and to ensure that pavers are not damaged during compaction. Debris or sand particles left on pavers which are being compacted can cause point loading which may chip, scrape or break the paver.

After sweeping and prior to compaction, the paved area must be inspected by the Engineer to ensure satisfactory color blending. Pavers shall be moved as directed by the Engineer to achieve good color distribution.

A low-amplitude, high-frequency plate compactor shall be used to compact the pavers into the bedding sand. The compactor shall transmit an effective force not less than 75 kN per square metre (1600 Lb/ft2) of plate area. The frequency of vibration shall be within the range of 75 to 100 Hz. Use Table 3 below to select size of compaction equipment:

Table 3

Paver Thickness and Require Minimum Compaction Force

Paver Thickness	Compaction Force
2 3/8 in. (60 mm)	3000 lbs [13 kN]
2 3/4 in. (70 mm) & 3 1/8 in. (80 mm)	5000 lbs [22 kN]

The Contractor shall use of a urethane plate compactor pad to minimize any scuffing of the paving stone surface.

The pavers shall be compacted to achieve consolidation of the sand bedding and brought to level and profile by not less than three passes. Initial compaction should proceed as closely as possible following the installation of the paving units and prior to the acceptance of any traffic or application of sweeping sand.

Any units that are structurally damaged during compaction shall be immediately removed and replaced.

Polymeric Joint Sand Application:

The application of the polymeric sand shall be in accordance with the manufacturer's requirements. The pavers shall be completely dry before any joint sand is placed on the surface. Do not spread sand if there is rain expected within four hours

Dry polymeric joint sand shall be swept into the joints until the joints are full. This will require at least two or three passes with the compactor. Do not compact within 3 ft. (1 m) of the unrestrained edges of the paving units. Remove excess sand and dust from the paver surface.

Wetting must be performed in three or more sprayings. The surface shall not be flooded and there shall be no runoff.

First spraying: Dampen surface with a mist. Do not displace sand. Wait 5-10 minutes

Subsequent sprayings: Lightly spray surface at 5-10 minute intervals to gradually moisten the full depth of the joints.

If there is a risk of rain during the drying time, the pavement shall be protected using a tarp.

All work to within 3 ft. (1 m) of the laying face must be left fully compacted with sand-filled joints at the completion of each day.

Excess joint sand shall be swept off as each section is completed and at the end of the workday.

Field Quality Control: The Contractor shall check final elevations for conformance to the drawings after removal of excess joint sand. All surface and pavement structures shall be true to the lines and levels, grades, thickness and cross sections shown on the drawings. All pavements shall be finished to lines and levels to ensure positive drainage at all drainage outlets and channels. The final surface elevations shall not deviate more than 3/8 in. (10 mm) under a 10 ft. (3 m) long straight edge.

The surface elevation of pavers shall be 1/8 to 1/4 in. (3 to 6 mm) above adjacent drainage inlets, concrete collars or channels.

Method of Measurement: Concrete Pavers will be measured for payment in place, and the area computed in square feet.

Basis of Payment: This work shall be paid for at the contract unit price per square foot for CONCRETE PAVERS, TYPE A; CONCRETE PAVERS, TYPE B; CONCRETE PAVERS, TYPE C; or DETECTABLE WARNINGS of the size and color specified which price shall include furnishing the materials, labor and materials necessary to complete the installation.

USE OF RAP (BMPR)

Effective: January 1, 2000
Revised: July 1, 2006

Revise Article 1004.07 to read:

"**1004.07 RAP Materials.** RAP is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded hot-mix asphalt pavement. RAP must originate from routes or airfields under federal, state or local agency jurisdiction. The Contractor shall supply documentation that the RAP meets these requirements.

(a) Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP will be allowed on top of the pile after the pile has been sealed. All stockpiles shall be free from contaminants listed in Article 1004.07(b).

(1) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only and represent the same aggregate quality, but shall be at least C quality or better, the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag), similar gradation and similar AC content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogenous", with a quality rating dictated by the lowest coarse aggregate quality present in the mixture. Homogenous stockpiles shall meet the requirements of Article 1004.07(c)(1). Homogeneous RAP stockpiles not meeting these requirements may be processed (crushing and screening) and retested.

(2) Conglomerate 5/8. Conglomerate 5/8 RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only. The coarse aggregate in this RAP shall be crushed aggregate only and may represent more than one aggregate type and/or quality but shall be at least C quality or better. This RAP may have an inconsistent gradation and/or asphalt cement content prior to processing. All conglomerate 5/8 RAP shall be processed prior to testing by crushing to where all RAP shall pass the 16 mm (5/8 in.) or smaller screen. Conglomerate 5/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate 5/8 RAP stockpiles shall meet the requirements of Article 1004.07(c)(1).

(3) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP containing coarse aggregate (crushed or round) that is at least D quality or better. This RAP may have an inconsistent gradation and/or asphalt content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate DQ RAP shall meet the requirements of Article 1004.07(c)(1).

Reclaimed Superpave Low ESAL IL-9.5L surface mixtures shall only be placed in conglomerate DQ RAP stockpiles due to the potential for rounded aggregate.

(4) Conglomerate 3/8. Conglomerate 3/8 RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only. The coarse aggregate in this RAP shall be crushed aggregate only and may represent more than one aggregate type and/or quality but shall be at least B quality or better. This RAP may have an inconsistent gradation and/or asphalt cement content prior to processing. All conglomerate 3/8 RAP shall be processed prior to testing by crushing to where all RAP shall pass the 9.5 mm (3/8 in.) or smaller screen. Conglomerate 3/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate 3/8 RAP stockpiles shall meet the requirements of Article 1004.07(c)(1).

(5) Other. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Other". "Other" RAP stockpiles shall not be used in any of the Department's bituminous mixtures.

(b) Contaminants. RAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

(c) RAP in Bituminous Concrete Mixtures. The allowable use of a RAP stockpile shall be set by the lowest quality of coarse aggregate in the RAP stockpile. Class I/Superpave surface mixtures are designated as containing Class B quality coarse aggregate only. Superpave Low ESAL IL-19.0L binder and IL-9.5L surface mixtures are designated as Class C quality coarse aggregate only. Class I/Superpave binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate only. Bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate only. Any mixture not listed above shall have the designated quality determined by the Department.

RAP containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in Class I/Superpave (including Low ESAL) surface mixtures only. RAP stockpiles for use in Class I/Superpave mixtures (including Low ESAL), base course, base course widening and Class B mixtures shall be either homogeneous, conglomerate 5/8, or conglomerate 3/8 RAP stockpiles. Conglomerate 5/8 RAP stockpiles shall not be used in Superpave surface mixture Ndesign 50 or greater. RAP for use in bituminous aggregate mixtures (BAM) shoulders and BAM stabilized subbase shall be from homogeneous, conglomerate 5/8, conglomerate 3/8 or conglomerate DQ stockpiles.

Additionally, RAP used in Class I/Superpave surface mixtures shall originate from milled or crushed mixtures only, in which the coarse aggregate is of Class B quality or better. RAP stockpiles for use in Class I/Superpave (including Low ESAL) binder mixes as well as base course, base course widening and Class B mixtures shall originate from milled or processed surface mixture, binder mixture, or a combination of both mixtures

uniformly blended to the satisfaction of the Engineer, in which the coarse aggregate is of Class C quality or better.

(1) Testing. All RAP shall be sampled and tested either during or after stockpiling.

a. General Testing Requirements for all RAP

For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 450 metric tons (500 tons) for the first 1800 metric tons (2,000 tons) and one sample per 1800 metric tons (2,000 tons) thereafter. A minimum of five tests shall be required for stockpiles less than 3600 metric tons (4,000 tons).

For testing existing stockpiles, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to extract representative samples throughout the pile for testing.

Before extraction, each field sample shall be split to test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

b. Additional Testing Requirements for Conglomerate 3/8

The Contractor shall test Conglomerate 3/8 RAP for Maximum Theoretical Specific Gravity (G_{mm}) at a frequency of one sample per 450 metric tons (500 tons) for the first 1800 metric tons (2,000 tons) and one sample per 1800 metric tons (2,000 tons) thereafter. A minimum of five tests shall be required for stockpiles less than 3600 metric tons (4,000 tons).

c. Evaluation of Test Results

All of the test results shall be compiled and averaged for asphalt content, gradation and, when applicable, G_{mm}. Individual test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	Homogeneous / Conglomerate	Conglomerate "D" Quality
25 mm (1 in.)		± 5%
12.5 mm (1/2 in.)	± 8%	± 15%
4.75 mm (No. 4)	± 6%	± 13%
2.36 mm (No. 8)	± 5%	
1.18 mm (No. 16)		± 15%
600 µm (No. 30)	± 5%	
75 µm (No. 200)	± 2.0%	± 4.0%
AC	± 0.4%[1]	± 0.5%
G_{mm}	± 0.02[2]	N/A

Note 1 – Tolerance for Conglomerate 3/8 is ±0.3%

Note 2 – Applies only to Conglomerate 3/8. If variation of the G_{mm} exceeds the ± 0.02 tolerance, a new stockpile of Conglomerate 3/8 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 content test results fall outside the appropriate tolerances, the RAP will not be allowed to be used in the Department's bituminous concrete mixtures unless the RAP representing the failing tests is removed from the stockpile to the satisfaction of the Engineer. All test data and acceptance ranges shall be sent to the District for evaluation.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the Illinois Test Procedure, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

(2) Designs. At the Contractor's option, bituminous concrete mixtures may be constructed utilizing RAP material meeting the above detailed requirements. The amount of RAP included in the mixture shall not exceed the percentages specified in the plans.

RAP designs shall be submitted for volumetric verification. If additional RAP stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP stockpile and design, and meets all of the requirements herein, the additional RAP stockpiles may be used in the original mix design at the percent previously verified.

(3) Production. The coarse aggregate in all RAP used shall be equal to or less than the nominal maximum size requirement for the bituminous mixture being produced.

To remove or reduce agglomerated material, a scalping screen, crushing unit or comparable sizing device approved by the Engineer shall be used in the RAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If the RAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP and either switch to the virgin aggregate design or submit a new RAP design. When producing mixtures containing conglomerate 3/8 RAP, a positive dust control system shall be utilized.

(4) Recording Proportions. HMA plants utilizing RAP shall be capable of automatically recording and printing the mixture proportions and asphalt cement content. The asphalt cement content as a percentage of the total mix shall be printed as well as the individual percentages of virgin asphalt cement and residual asphalt cement from the RAP.

(d) RAP in Aggregate Surface Course and Aggregate Shoulders. The use of RAP in Aggregate Surface Course and Aggregate Shoulders shall be as follows.

(1) Stockpiles. RAP stockpiles may be any of those listed in Article 1004.07(a), except "Other".

(2) 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.

(e) RAP in Porous Granular Embankment (PGE). The use of RAP in PGE shall be as follows.

(1) Percent of RAP. The amount of RAP used in PGE shall be limited to a maximum of 40 percent blended with 60 percent gravel, crushed gravel, crushed stone, crushed concrete, crushed slag, chats, crushed sandstone, or wet-bottom boiler slag. Crushed steel slag or other expansive materials shall be limited to a maximum of 10 percent. Prior to blending, the RAP shall be tested by the Department to determine the percent of steel slag in the RAP. Any blending shall be by interlocked mechanical feeders as approved by the Engineer prior to beginning production. RAP for use in Porous Granular Embankment

(2) Stockpiles. RAP stockpiles may be any of those listed in Article 1004.07(a).

(3) Gradation. The gradation of the RAP material shall be determined by the Engineer. If a gradation is specified, the gradation shall be tested according to the AGCS, Category 3, using Illinois Modified AASHTO T 27, with the following exceptions.

a. The sample shall be air dried to prevent the material from clumping.

b. No washed minus #200 will be calculated.

TRAFFIC SIGNAL SPECIFICATIONS
Effective: January 1, 2002 Revised: May 22, 2002

These Traffic Signal Special Provisions and the "District 1 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.

SECTION 800 ELECTRICAL

INSPECTION OF ELECTRICAL SYSTEMS.

Add the following to Section 802.01 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.

Revise Section 802.02 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 802 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 incidental to the contract without any extra compensation allowed to the Contractor.

SUBMITTALS.

Revise Section 802.04 of the Standard Specifications to read:

The Contractor shall provide:

a. All material approval requests shall be submitted a minimum of seven (7) days prior to the delivery of equipment to the job site, or within 30 consecutive calendar days after the contract is awarded, or within 15 consecutive calendar days after the preconstruction meeting, whichever is first.

b. Seven (7) copies of a letter from the Traffic Signal Contractor listing the 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. The letters will be stamped as approved or not approved accordingly and returned to the Contractor.

c. One (1) copy of material catalog cuts.

d. Seven (7) copies of mast arm poles and assemblies.

e. 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 as required in items b, c and d.

f. Exceptions, Deviations and Substitutions. In general, exceptions to and deviations from the requirements of the Contract Documents will not be allowed. It is the Contractor's responsibility to note any deviations from Contract requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution is superior to the material or equipment required by the Contract Documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.

MAINTENANCE AND RESPONSIBILITY.

Revise Section 802.07 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) 705-4139 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) 705-4139 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 signalizing device on the Department's highway system at any time without notification.

TRAFFIC SIGNAL INSPECTION (TURN-ON).

Revise Section 802.10 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) 705-4139 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 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 (280 mm X 430 mm) 11" x 17" of the cabinet wiring diagrams.
7. The controller manufacturer shall provide a printer at the turn-on to supply a printed form, not to exceed (280 mm X 430 mm) 11" x 17" 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 803.00 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 1 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 805.00 of the Standard Specifications to read:

Description. This work shall consist of all materials and labor required to install, modify, or extend the electric service installation. All installations shall meet the requirements of the details in the "District 1 Standard Traffic Signal Design Details" and applicable portions of the Specifications.

Materials.

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

b. Enclosures.

1. Pole Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 4X, unfinished single door design, fabricated from minimum 2.03 mm (0.080-inch) 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 350 mm (14-inches) high, 225 mm (9-inches) wide and 200 mm (8-inches) in depth is required. The cabinet shall be channel mounted to a wooden utility pole using assemblies recommended by the manufacturer.

2. Ground Mounted Cabinet. The cabinet shall be 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 3.175 mm (0.125-inch) thick, the top 6.350 mm (0.250-inch) thick and the bottom 12.70 mm (0.500-inch) 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 1.91 mm (.075-inch) 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 1000 mm (40-inches high), 400 mm (16-inches) wide and 375 mm (15-inches) in depth is required. The cabinet shall be mounted upon a square Type A concrete foundation as indicated on the plans. The foundation is paid for separately.

c. Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 volt load circuit by the means MOV and thermal fusing technology. The response time shall be <5n seconds and operate within a range of –40C to +85C. The surge protector shall be UL 1449 Listed.

d. Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 amperes, otherwise noted on the plans, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V.

e. Fuses, Fuseholders and Power Indicating Light. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 V AC and shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage. The power indicating light shall be LED type with a green colored lens and shall be energized when electric utility power is present.

f. Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.

g. Utility Services Connection. The Contractor shall notify the Utility Company marketing representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Utility Company marketing representative has received service charge payments from the Contractor. Prior to contacting the Utility Company marketing representative for service connection, the service installation controller cabinet and cable must be installed for inspection by the Utility Company.

h. Ground Rod. Ground rods shall be copper-clad steel, a minimum of 3.0 meters (10') in length, and 20mm (3/4") in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the contract.

Installation

a. General. The Contractor shall confirm the orientation of the traffic service installation and its door side with the engineer, prior to installation. All conduit entrances into the service installation shall be sealed with a pliable waterproof material.

b. Pole Mounted. Brackets designed for pole mounting shall be used. All mounting hardware shall be stainless steel. Mounting height shall be as noted on the plans or as directed by the Engineer.

c. Ground Mounted. The service installation shall be mounted plumb and level on the foundation and fastened to the anchor bolts with hot-dipped galvanized or stainless steel nuts and washers. The space between the bottom of the enclosure and the top of the foundation shall be caulked at the base with silicone.

Basis of Payment. The service installation shall be paid for at the contract unit price each for SERVICE INSTALLATION of the type specified which shall be payment in full for furnishing and installing the service installation complete. The type A foundation which includes the ground rod shall be paid for separately. SERVICE INSTALLATION, POLE MOUNTED shall include the 20mm (3/4") grounding conduit, ground rod, and pole mount assembly. Any changes by the utility companies shall be approved by the engineer and paid for as an addition to the contract according to Article 109.05 of the Standard Specifications.

GROUNDING OF TRAFFIC SIGNAL SYSTEMS.

Revise Section 807.00 of the Standard Specifications to read:

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

The grounding electrode system shall include a ground rod installed with each traffic signal controller concrete foundation and all mast arm and post concrete foundations. An additional ground rod will be required at locations were measured resistance exceeds 25 ohms. Ground rods are included in the applicable foundation paid item and will not be paid for separately.

Testing shall be according to Section 801.11.

a) The grounded conductor (neutral conductor) shall be white color coded. This conductor shall be bonded to the equipment grounding conductor only at the Electric Service Installation. All power cables shall include one neutral conductor of the same size.

b) The equipment grounding conductor shall be green color coded. The following is in addition to Section 801.14 of the Standard Specifications.
   1) Equipment grounding conductors shall be XLP insulated No. 6, unless otherwise noted on the plans, and bonded to the grounded conductor (neutral conductor) only at the Electric Service Installation. The 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. 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.

c) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, listed pressure connectors, listed clamps or other approved listed means.

HANDHOLES.

Add the following to Section 814.00 of the Standard Specifications:

All handholes shall be concrete, poured in place, with inside dimensions of 549 mm (21-1/2") 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 15.875 mm (7/16") 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 300 mm (12 inches).

All conduits shall enter the handhole at a depth of (760 mm) 30" except for the conduits for detector loops when the handhole is less than (1.52 m) 5' from the detector loop.

Steel cable hooks shall be coated with hot-dipped galvanization in accordance with AASHTO Specification M111. Hooks shall be a minimum of 9.525 mm (3/8") diameter and extend into the handhole at least 150 mm (6 inches). Hooks shall be placed a minimum of 300 mm (12 inches) 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 to Section 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. 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 (100 mm) 4" and with a minimum (25 mm) 1" coverage over the XLP insulation, underwater grade.

Revise Section 817.05 of the Standard Specifications to read:

Basis of Payment: The tracer cable shall be paid for separately as ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C per (meter) foot, 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 Section 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 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.

Revise Section 817.05 of the Standard Specifications to read:

Basis of Payment. Grounding cable shall be measured in place for payment in (meter) foot. 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/other Listed connectors and hardware.

RAILROAD INTERCONNECT CABLE.

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

Add to Section 817.02 of the Standard Specifications:

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

Revise Section 817.05 of the Standard Specifications to read:

Basis of Payment. This work shall be paid for at the contract unit price per (meter) foot for ELECTRIC CABLE IN CONDUIT, RAILROAD, NO. 14 3C, which price shall be payment in full for furnishing, installing, and making all electrical connections in the traffic signal controller cabinet. Connections in the railroad controller cabinet shall be performed by railroad personnel.

MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION.

Revise Section 850.00 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, telephone service installations, communication cables and conduits to adjacent intersections.

The maintenance shall be according to District 1 revised Article 802.07 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. At approaches where a yellow flashing indication is necessary, as directed by the Engineer, stop signs will not be required. The Contractor shall furnish and equip all their 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 State. 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 Section 857.00 of the Standard Specifications:

Controllers shall be NEMA TS2 Type 1, Econolite ASC/2S-1000 or Eagle M40 unless specified otherwise on the plans or elsewhere on these specifications. Only controllers supplied by one of the District 1 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.

MASTER CONTROLLER.

Revise Sections 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 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:

By December 31, 2002, the Master Controller shall provide a background timer which will prevent phases from being skipped during program changes.

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.

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.

The cabinet shall be provided with a Siecor CAC 3000, or equivalent, Outdoor Network Interface for termination of the telephone service. It shall be mounted to the inside of the cabinet in a location suitable to provide access for termination of the telephone service at a later date. The CAC 3000 shall be equipped with a standard Three-Electrode Heavy Duty Gas Tube Surge Arrestor.

The cabinet shall provide a caller identification unit with 50 number memory.

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.

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 suitable media (CD, 3 1/2" or 5 1/4" floppy disks as requested 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 his use in monitoring the system.

The Contractor shall be required to setup graphic displays and all software parameters for every intersection to be interconnected under this Contract, including complete viewing and control capabilities from IDOT remote monitor.

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 1 staff.

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 1 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.

Revise Section 871.00 of the Standard Specifications to read:

This work shall consist of furnishing and installing Fiber Optical cable in conduit with all accessories and connectors according to Section 871 of the Standard Specifications. The cable shall be of the type, size, and the number of fiber specified.

The control cabinet distribution enclosure shall be 3M Model 8173 or an approved equivalent. The fiber optic cable shall provide six fibers per tube for the amount of fibers called for in the Fiber Optic Cable pay item in the Contract. A minimum of six multimode fibers from each cable shall be terminated with approved mechanical connectors at the distribution enclosure. Fibers not being used shall be labeled "spare." Fibers not attached to the distribution enclosure shall be capped and sealed. A minimum of (4m) 13.0' of slack cable shall be provided for the controller cabinet. The controller cabinet slack cable shall be stored as directed by the Engineer.

Fiber Optic cable may be gel filled or 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 (meter) foot for the cable in place, including distribution enclosure and all connectors.

CONCRETE FOUNDATIONS.

Add the following to Section 878.03 of the Standard Specifications:

All anchor bolts shall be according to Section 1006.09, except all anchor bolts shall be hot dipped galvanized the full length of the anchor bolt including the hook.

Concrete Foundations, Type "A" for Traffic Signal Posts shall provide anchor bolts with the bolt pattern specified within the "District 1 Standard Traffic Signal Design Details." All Type "A" foundations shall be a minimum depth of 1.22 m (48").

Concrete Foundations, Type "D" for Traffic Signal Cabinets shall be a minimum of 1.22 m (48") long and 790 mm (31") wide. All Type "D" foundations shall be a minimum depth of 1.22 m (48"). The concrete apron shall be 910 mm X 1220 mm X 130 mm (36"x48"x5"). 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:

DESIGN TABLE FOR 750 mm (30-INCH) DIAMETER FOUNDATION
FOR ALL MAST ARMS 4.26M (14 FEET) TO 16.76M (55 FEET)
AND ALL COMBINATION POLES (DESIGN DEPTH IS 4.57 m [15 FEET])

	TYPE OF SOIL DESCRIPTION	DESIGN DEPTH OF FOUNDATION		TYPE OF SOIL DESCRIPTION	DESIGN DEPTH OF FOUNDATION
1.	SOFT CLAY	5.33 m(17' – 6")	*4.	LOOSE SAND	3.05 m(10' – 0")
2.	MEDIUM CLAY	3.81 m(12' – 6")	*5.	MEDIUM SAND	2.74 m(9' – 0")
3.	STIFF CLAY	2.59 m(8' – 6")	*6.	DENSE SAND	2.44 m(8' – 0")

* WATER TABLE ASSUMED BELOW DEPTHS SPECIFIED

No foundation is to be poured until the Resident Engineer gives his/her approval as to the depth of the foundation. Foundations used for Roadway Lighting shall provide an extra 65 mm (2-1/2 inch) duct.

DETECTOR LOOP.

Revise Section 886 of the Standard Specifications to read:

A minimum of seven (7) working days prior to the Contractor cutting loops, the Contractor shall have the proposed loop locations marked and contact the Area Traffic Signal Maintenance and Operations Engineer (847) 705-4139 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 1 Standard Traffic Signal Design Details". Saw-cuts (homeruns on preformed detector loops) from the loop to the edge of pavement shall be made perpendicular to the edge of pavement when possible in order to minimize the length of the saw-cut (homerun on preformed detector loops) unless directed otherwise by the Engineer or as shown on the plan.

The detector loop cable insulation shall be labeled with the cable specifications.

Each loop detector lead-in wire shall be labeled in the handhole using a Panduit 250W175C water proof tag, or an approved equal, secured to each wire with nylon ties.

Resistance to ground shall be a minimum of 100 mega-ohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries. Quality readings shall be more than 5.

(a) Type I. All loops installed in new asphalt pavement shall be installed in the binder course and not in the surface course. The edge of pavement, curb and handhole shall be cut with a 6.3 mm (1/4") deep x 100 mm (4") 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 3 mm (1/8") 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 incidental to the price of the detector loop. Unit duct, trench and backfill, and drilling of pavement or handholes shall be incidental to detector loop quantities.

(b) Preformed. This work shall consist of furnishing and installing a rubberized heat resistant preformed traffic signal loop in accordance with the Standard Specifications, except for the following:

Preformed detector loops shall be installed in new pavement constructed of portland cement concrete using mounting chairs or tied to re-bar or the preformed detector loops may be placed in the sub-base. Loop lead-ins shall be protected to the satisfaction of the Engineer.

Handholes shall be placed next to the shoulder or back of curb when preformed detector loops enter the handhole.

Preformed detector loops shall be factory assembled. Homeruns and interconnects shall be pre-wired and shall be an integral part of the loop assembly. The loop configurations and homerun lengths shall be assembled for the specific application. The loop and homerun shall be constructed using 17.2 mm (11/16") outside diameter (minimum), 9.5 mm (3/8") inside diameter (minimum) Class A oil resistant synthetic cord reinforced hydraulic hose with 1,720 kPa (250 psi) internal pressure rating. Hose for the loop and homerun assembly shall be one continuous piece. No joints or splices shall be allowed in the hose except where necessary to connect homeruns or interconnects to the loops. This will provide maximum wire protection and loop system strength. Hose tee connections shall be heavy duty high temperature synthetic rubber. The tee shall be of proper size to attach directly to the hose, minimizing glue joints. The tee shall have the same flexible properties as the hose to insure that the whole assembly can conform to pavement movement and shifting without cracking or breaking. The wire used shall be #16 THWN stranded copper. The number of turns in the loop shall be application specific. Homerun wire pairs shall be twisted a minimum of four turns per foot. No wire splices will be allowed in the preformed loop assembly. The loop and homeruns shall be filled and sealed with a flexible sealant to insure complete moisture blockage and further protect the wire.

Basis of Payment. This work shall be paid for at the contract unit price per meter (foot) for DETECTOR LOOP, TYPE I or PREFORMED DETECTOR LOOP as specified in the plans, which price shall be payment in full for furnishing and installing the detector loop and all related connections for proper operation.

EMERGENCY VEHICLE PRIORITY SYSTEM.

Revise Section 887.00 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 1 Standard Traffic Signal Design Details." The Confirmation Beacon shall consist of a 150 watt Par 38 flood lamp for each direction of pre-emption. The lamp shall have an adjustable mount with a weatherproof enclosure for cable splicing. All hardware shall be cast aluminum or stainless steel. Holes drilled into signal poles, mast arms, or posts shall require rubber grommets. In order to maintain uniformity between communities, the confirmation beacons shall indicate when the control equipment receives the pre-emption signal. The pre-emption movement shall be signalized by a flashing indication at the rate specified by Section 4E-5 of the "Manual On Uniform Traffic Control Devices." The stopped pre-empted movements shall be signalized by a continuous indication.

All light operated systems shall operate at a uniform rate of 14.035 Hz ±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 incidental to 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.

TEMPORARY TRAFFIC SIGNAL INSTALLATION.

Revise Section 890.00 of the Standard Specifications to read:

Only an approved equipment vendor will be allowed to assemble the temporary traffic signal cabinet. Also, an approved equipment vendor shall assemble and test a temporary railroad traffic signal cabinet. (Refer to the "Inspection of Controller and Cabinet" specification). A representative of the approved control equipment vendor shall be present at the temporary traffic signal turn-on inspection.

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.

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) 100 mm (4 inch) diameter holes to run the electric cables through. The 100 mm (4 inch) diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.

Grounding shall be provided for the temporary traffic signal cabinet meeting or exceeding the applicable portions of the National Electrical Code, Section 807 of the Standard Specifications and shall meet the requirements of the District 1 Traffic Signal Specifications for "Grounding of Traffic Signal Systems".

All traffic signal sections and pedestrian signal sections shall be 300 mm (12 inches). 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 cable slack to relocate heads to any position on the span wire or at locations illustrated on the plans for construction staging. The temporary traffic signal shall remain in operation during all signal head relocations. Each temporary traffic signal head shall have its own cable from the controller cabinet to the signal head.

The existing system interconnect is 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 incidental to the item Temporary Traffic Signal Installation.

All emergency vehicle preemption equipment (light detectors, light detector amplifiers, confirmation beacons, etc.) as shown on the temporary traffic signal plans shall be provided by the Contractor. It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle preemption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency. All light operated systems shall operate at a uniform rate of 14.035 hz ±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 incidental to the item Temporary Traffic Signal Installation.

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. Minor cross streets shall have vehicular detection provided by Microwave Vehicle Sensors or 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.

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.

The 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.

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.

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 incidental to the cost of this item. When temporary traffic signals are to be installed at locations where existing signals are presently operating, the Contractor shall be fully responsible for the maintenance of the existing signal installation as soon as he begins any physical work on the Contract or any portion thereof. Maintenance responsibility of the existing signals shall be incidental 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) 705-4139 for an inspection of the installation(s).

Temporary Traffic Signals for bridge projects shall follow the State Standards, Standard Specifications, District 1 Traffic Signal Specifications and any plans for Bridge Temporary Traffic Signals included in the plans. The installation shall meet the above requirements for "Temporary Traffic Signal Installation". In addition all electric cable shall be aerially suspended, at a minimum height of 5.5m (18 feet), on temporary wood poles (Class 5 or better) of 13.7 m (45 feet), minimum height. The signal heads shall be span wire mounted or bracket mounted to the wood pole or as directed by the Engineer. The Controller cabinet shall be mounted to the wood pole or as directed by the Engineer. Microwave vehicle sensors or video vehicle detection may be used in place of the detector loops as approved by the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL INSTALLATION. 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 Section 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 by them outside the right-of-way at their 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.

PEDESTRIAN PUSH-BUTTON.

Add the following to Section 1074.02 (b) and (d) of the Standard Specifications to read:

(b) Push-button assemblies shall be a cast aluminum alloy Pelco Push-button station, or an approved equivalent.
(d) The assembly shall provide ADA push-buttons with one of the following signs: SF-1017, 1018 or 1020 - 5" x 7¾" (127 mm x 197 mm).

CONTROLLER CABINET AND PERIPHERAL EQUIPMENT.

Revise Section 1074.03 of the Standard Specifications to read:

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.

- 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.
- Controller Harness – Provide a TS2 Type 2 "A" wired harness in addition to the TS2 Type 1 harness.
- Surge Protection – EDCO Model 1210 IRS with failure indicator.
- BIU – Containment screw required.
- Transfer Relays – Solid state or mechanical flash relays are acceptable.
- Switch Guards – All switches shall be guarded.
- Heating – Two (2) porcelain light receptacles with cage protection controlled by both a wall switch and a thermostat.
- Plan & Wiring Diagrams – 12" x 16" (3.05mm x 4.06mm) moisture sealed container attached to door.
- Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle pre-emption and sixteen channel (16) of vehicular operation.
- Field Wiring Labels – All field wiring shall be labeled.
- Field Wiring Termination – Approved channel lugs required.
- Power Panel – Provide a nonconductive shield.
- Circuit Breaker – Unless otherwise noted the circuit breaker shall be rated 30 amps.
- Police Door – Provide wiring and termination for plug in manual phase advance switch.
- Railroad Pre-Emption Test Switch – Eaton 8830K13 SHA 1250 or equivalent.

TRAFFIC ACTUATED CONTROLLER AND CABINET INTERCONNECTED WITH RAILROADS.

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

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

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 suppliers District One facility prior to field installation.

Pedestrian clearance during railroad pre-emption shall be limited to a flashing don't walk interval in length to the vehicle yellow clearance interval and shall time concurrently with the vehicle yellow clearance.

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

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

A method of supervising the 3 conductor cable interconnecting the traffic and railroad facilities shall provide flashing operation during failed cable conditions. Upon detection of a failed railroad interconnect the controller shall provide one (1) track clearance green interval and shall enter flashing operation at end of track clearance yellow interval. Such flashing operation must be manually reset. The supervision circuit shall, within reason, be capable of detecting failure of the supervision circuit components themselves, and shall provide fail-safe operation upon such failure.

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

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

A test switch shall be provided in the railroad circuit to initiate pre-emption. See cabinet specifications.

ELECTRIC CABLE.

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

MAST ARM ASSEMBLY AND POLE.

Add the following to Section 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 1 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 manifestation of insects or critters. 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 Section 1077.03 (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) or galvanized. A corrosive resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on. Post top mounting collars are required on all posts, and shall be constructed of the same material as the brackets.

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 1 Standard Traffic Signal Design Details."

SIGNAL HEAD, BACKPLATE.

Delete 1st sentence of 1078.03 of the Standard Specifications and add "All backplates shall be aluminum and louvered".

INDUCTIVE LOOP DETECTOR.

Add the following to Section 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.

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.

Display. The LED blank out sign shall provide the correct symbol and color for "NO LEFT TURN" OR "NO RIGHT TURN" indicated in accordance with the requirements of the "Manual on Uniform Traffic Control Devices". The message shall be formed by rows of LEDs.

The message shall be clearly legible. 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.

All LEDs shall be T-1 ¾ (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).

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.

Housing. The housing shall be constructed of extruded aluminum. All corners and seams shall be heli-arc welded to provide a weatherproof seal around the entire case. Hinges shall be continuous full-length stainless steel. Signs shall have stainless steel hardware and provide tool free access to the interior of the sign. Doors shall be 0.125-inch thick extruded aluminum with a 3/16-inch x 1-inch neoprene gasket and sun hood. The sign face shall have a polycarbonate, matte clear, lexan face plate. Drainage shall be provided by four drain holes at the corners of the housing. The finish on the sign housing shall include two coats of exterior enamel applied after the surface is acid-etched and primed with zinc-chromate primer.

Mounting hardware shall be black polycarbonate or galvanized steel and similar to mounting Signal Head hardware and brackets specified herein.

Basis of Payment. This work shall be paid for at the unit price each for ILLUMINATED SIGN, 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 1 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.

RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM

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

After the new signalized intersection is added or the existing signal is modified, the traffic signal system shall be re-optimized by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for District 1 of the Illinois Department of Transportation. The Contractor shall contact the Area Traffic Signal Operations Engineer at (708) 705-4139 for a listing of approved Consultants.

A listing of existing signal equipment, interconnect information and existing phasing/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 floppy disks, copies containing software runs for the existing optimized system and a timing database that includes intersection displays will be made for the Consultant. The Consultant shall consult with the Area Traffic Signal Operations Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system; in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the re-optimization.

Traffic counts shall be taken at the subject intersection a minimum of 30 days after the traffic signals are approved for operation by the Area Traffic signal Operations Engineer. Seven day/twenty-four hour automatic traffic recorder counts will be required and manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m. and 3:30 p.m. to 6:30 p.m. on typical weekday from midday Monday to midday Friday, and if necessary, on the weekend. Additional manual turning movement counts may be necessary if heavy traffic flows exist during off peak hours. The turning movement counts shall identify cars, heavy vehicles, buses, and pedestrian movements.

A Capacity Analysis shall be conducted at the subject intersection to determine its level of service and degree of saturation. Appropriate signal timings shall be developed for the subject intersection and existing timings shall be utilized for the rest of the intersections in the system with minor adjustments if necessary. Changes to the cycle lengths and offsets for the entire system may be required due to the addition/modification of the subject intersection. Both volume and occupancy shall be considered when developing the re-optimized timing program. Signal system optimization analyses shall be conducted utilizing SYNCHRO, PASSER II, TRANSYT 7F, SIGNAL 2000 or other appropriate approved computer software.

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

The Consultant shall furnish to IDOT an original and two copies of the revised SCAT Report for the re-optimized system. The report shall contain the following: turning movement and automatic traffic recorder counts, capacity analyses for each count period, computer optimization analysis for each count period, proposed implementation plans and summaries including system description, analysis methodology, method of effectiveness comparison results and special recommendations and/or observations. The new report shall follow the format of the old report and shall incorporate all data from the old report which remains unchanged. Copies of the entire database including intersection displays and any other displays which the system software allows shall be furnished to IDOT and to IDOT's Traffic Signal Maintenance Contractor.

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

UNIT DUCT.

All installations of Unit Duct shall be incidental to 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 (3 m) 10' up the wood pole, unless otherwise shown on the plans. Unit duct shall meet the requirements of NEC Article 343.

SIGNAL HEAD, LIGHT EMITTING DIODE.

a) General:

1) Signal Head, Light Emitting Diode (LED), 1 Face, (All Section Quantities), (All Mounting Types) shall meet the requirements of Sections 880 and 881 and Articles 1078.01 and 1078.02 of the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2002, with the following modifications:

2) All signal and pedestrian heads shall be 300 mm (12") glossy black polycarbonate. Connecting hardware and mounting brackets shall be polycarbonate (black) or galvanized. A corrosive resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on. Post top mounting collars are required on all posts, and shall be constructed of the same material as the brackets.

3) The optical unit of all traffic signal and pedestrian head sections shall be light emitting diodes (LEDs) instead of incandescent bulbs. Each signal head shall conform fully to the "Interim Purchase Specification of the Institute of Transportation Engineers (ITE) for LED Vehicle Traffic Signal Modules" published July, 1998, or applicable successor ITE specification.

4) The lens of each signal indication shall be tinted with a wavelength-matched color to reduce sun phantom effect and enhance on/off contrast. The tinting shall be uniform across the lens face. Polymeric lens shall provide a surface coating applied to provide abrasion resistance.

5) Each pedestrian signal LED module shall provide the ability to actuate the outlined upraised hand and the outlined walking person on one 12-inch (300mm) section. Two (2) sections shall be installed. The top section shall be wired to illuminate only the upraised hand and the bottom section shall be the walking man. "Egg Crate" type sun shields are not permitted. All figures must be a minimum of 9 inches (225mm) in height and easily identified from a distance of 120-feet (36.6m).

6) The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.

7) In the event of a power outage, light output from the LED modules shall cease instantaneously.

8) In addition to conforming with the requirements for circular LED signal modules, LED arrow indication modules shall meet existing specifications stated in the ITE Standard: "Vehicle Traffic Control Signal Heads," section 9.01. The LEDs arrow indication shall be a solid display with a minimum of three (3) outlining rows of LEDs and at least one (1) fill row of LEDs. The LEDs shall be spread evenly across the illuminated portion of the arrow area.

9) The LED signal modules shall be replaced or repaired if an LED signal module fails to function as intended due to workmanship or material defects within the first 60 months from the date of delivery. LED signal modules which exhibit luminous intensities less than the minimum values specified in Section 4.1.1 of the Interim Purchase Specification of the ITE for LED Vehicle Traffic Signal Modules within the first 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.

10) Each module shall consist of an assembly that utilizes LEDs as the light source in lieu of an incandescent lamp for use in traffic signal sections.

11) The LEDs utilized in the modules shall be AlInGaP technology for red, yellow, Portland orange (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.

12) The individual LEDs shall be wired such that a catastrophic loss or the failure of one or more LED will not result in the loss of the entire module.

b) Electrical

1) Maximum power consumption for LED modules is per Table 1.

2) LED modules will have EPA Energy Star compliance ratings, if applicable to that shape, size and color.

3) The modules shall operate from a 60 HZ ±3 HZ AC line over a voltage ranging from 95 volts to 135 volts. The fluctuations of line voltage shall have no visible effect on the luminous intensity of the indications.

4) Operating voltage of the modules shall be 120 VAC. All parameters shall be measured at this voltage.

5) The LED signal module shall have a power factor of 0.90 or greater.

6) Total harmonic distortion (current and voltage) induced into an AC power line by a LED signal module shall not exceed 20 percent.

7) The signal module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients as stated in Section 2.1.6 of NEMA Standard TS-2, 1992.

8) The LED circuitry shall prevent perceptible flicker to the unaided eye over the voltage range specified above.

9) All wiring and terminal blocks shall meet the requirements of Section 13.02 of the ITE Publication: Equipment and Material Standards, Chapter 2 (Vehicle Traffic Control Signal Heads).

10) The modules shall be operationally compatible with currently used controller assemblies (solid state load switches, flashers, and conflict monitors).

11) When a current of 20 mA AC (or less) is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.

12) The modules and associated on-board circuitry must meet Class A emission limits referred in Federal Communications Commission (FCC) Title 47, SubPart B, Section 15 regulations concerning the emission of electronic noise.

c) Photometric Requirements

1) The minimum initial luminous intensity values for the modules shall be as stated in Table 2 and/or Table 4 at 25°C.

2) The modules shall meet or exceed the illumination values as shown in Table 3 and/or Table 4, throughout the useful life based on normal use in a traffic signal operation over the operating temperature range.

3) The measured chromaticity coordinates of the modules shall conform to the chromaticity requirements of Table 5, throughout the useful life over the operating temperature range.

d) Environmental Requirements

1) The LED signal module shall be rated for use in the operating temperature range of -40°C (-40°F) to +74°C (+165°F). The modules shall meet all specifications throughout this range.

2) The LED signal module shall be protected against dust and moisture intrusion per the requirements of NEMA Standard 250-1991 for Type 4 enclosures to protect all internal components.

e) Construction

1) The LED signal module shall be a single, self-contained device, not requiring on-site assembly for installation. The power supply for the module shall be integral to the unit.

2) The circuit board and power supply shall be contained inside the module.

3) The assembly and manufacturing process for the LED signal assembly shall be designed to assure all internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

f) Materials

1) Material used for the lens and signal module construction shall conform to ASTM specifications for the materials.

2) Enclosures containing either the power supply or electronic components of the signal module shall be made of UL94VO flame retardant materials. The lens of the signal module is excluded from this requirement.

g) Traffic Signal and Pedestrian LED Module Identification

1) Each module shall have the manufacturer's name, trademark, model number, serial number, date of manufacture (month-year), and lot number as identification permanently marked on the back of the module.

2) The following operating characteristics shall be permanently marked on the back of the module: rated voltage and rated power in Watts and Volt-Ampere.

3) Each module shall have a symbol of the type of module (i.e. circle, arrow, etc.) in the color of the module. The symbol shall be 25.4 mm (one inch) in diameter. Additionally, the color shall be written out in 12.7mm (½ in) letters next to the symbol.

4) If a specific mounting orientation is required, each module shall have prominent and permanent marking(s) for correct indexing and orientation within a signal housing. The markings shall consist of an up arrow, or the word "UP" or "TOP".

h) Traffic Signal LED Module

1) Modules can be manufactured under this specification for the following faces:

a 300 mm (12-inch) circular, multi-section
b 300 mm (12-inch) arrow, multi-section
c 300 mm (12-inch) pedestrian, 2 sections

2) The maximum weight of a module shall be 1.8 kg (4 lbs.).

3) Each module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.

i) Retrofit Traffic Signal Module

1) The following specification requirements apply to the Retrofit module only. All general specifications apply unless specifically superceded in this section.

2) Retrofit modules can be manufactured under this specification for the following faces:

a 300 mm (12-inch) circular, multi-section
b 300 mm (12-inch) arrow, multi-section
c 300 mm (12-inch) pedestrian, 2 sections

3) The module shall fit into existing traffic signal section housings built to the specifications detailed in ITE Publication: Equipment and Material Standards, Chapter (Vehicle Traffic Control Signal Heads).

4) 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.

5) The maximum weight of a Retrofit module shall be 1.8 kg (4 lbs.).

6) 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.

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.

j) Two secured, color coded, 600 V, 20 AWG minimum, jacketed wires, conforming to the National Electric Code, rated for service at +105°C, are to be provided for electrical connection for each LED signal module. Conductors for modules, including Retrofit modules, shall be 39.4-inches (1m) in length, with quick disconnect terminals attached.

k) Lens

1) The lens of the module shall be tinted and integral to the unit, convex with a smooth outer surface and made of plastic.

2) The use of tinting or other materials to enhance ON/OFF contrasts shall not affect chromaticity and shall be uniform across the face of the lens.

3) The LED signal module lens shall be UV stabilized and shall be capable of withstanding ultraviolet (direct sunlight) exposure for a minimum period of 60 months without exhibiting evidence of deterioration.

4) The polymeric lens shall have a surface coating or chemical surface treatment to provide front surface abrasion resistance.

l) The following specification requirements apply to the 12-inch (300 mm) arrow module only. All general specifications apply unless specifically superceded in this section.

1) The arrow module shall meet specifications stated in Section 9.01 of the ITE Publication: Equipment and Material Standards, Chapter 2 (Vehicle Traffic Control Signal Heads) for arrow indications.

2) The LEDs shall be spread evenly across the illuminated portion of the arrow area.

m) The following specification requirements apply to the 12-inch (300 mm) PV module only. All general specifications apply unless specifically superceded in this section.

1) The module shall be a module designed and constructed to be installed in a programmed visibility (PV) signal housing without modification to the housing.

2) The LEDs shall be spread evenly across the module.

Basis of Payment. This item shall be paid for at the contract unit price each for SIGNAL HEAD, LED, of the type specified, which price shall be payment in full for furnishing the equipment described above including signal head, LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of signal faces, the number of signal sections, and the method of mounting.

Pedestrian head(s) shall be paid for at the contract unit price each for PEDESTRIAN SIGNAL HEAD, LED, of the type specified and of the particular kind of material when specified.

The type specified will indicate the number of faces and the method of mounting.

When installed in an existing signal head, this item shall be paid for at the contract unit price each for SIGNAL HEAD, LED of the type specified, RETROFIT, which price shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of signal faces, the number of signal sections, and the method of mounting.

When installed in an existing signal head, this item shall be paid for at the contract unit price each for PEDESTRIAN SIGNAL HEAD, LED, of the type specified, RETROFIT, which price shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of faces and the method of mounting.

TABLES

Table 1 Maximum Power Consumption (in Watts)

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

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

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

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

	300 mm (12-inch)		
Angle(v,h)	Red	Yellow	Green
2.5, ±2.5	339	678	678
2.5, ±7.5	251	501	501
2.5, ±12.5	141	283	283
2.5, ±17.5	77	154	154
7.5, ±2.5	226	452	452
7.5, ±7.5	202	404	404
7.5, ±12.5	145	291	291
7.5, ±17.	89	178	178
7.5, ±22.5	38	77	77
7.5, ±27.5	16	32	32
12.5, ±2.5	50	101	101
12.5, ±7.5	48	97	97
12.5, ±12.5	44	89	89
12.5, ±17.5	34	69	69
12.5, ±22.5	22	44	44
12.5, ±27.5	16	32	32
17.5, ±2.5	22	44	44
17.5, ±7.5	22	44	44
17.5, ±12.5	22	44	44
17.5, ±17.5	22	44	44
17.5, ±22.5	20	41	41
17.5, ±27.5	16	32	32

Table 4 Minimum Initial & Maintained Intensities for Arrow and Pedestrian Indications (in cd/m2)

	Red	Yellow	Green
Arrow Indication	5,500	11,000	11,000

Table 5 Chromaticity Standards (CIE Chart) Section 8.04 of

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

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
111 NORTH CANAL STREET
CHICAGO, ILLINOIS 60606-7208

REPLY TO
ATTENTION OF:

JUL 2 1 2006

Technical Services Division
Regulatory Branch
LRC-2006-544

SUBJECT: Proposed Replacement of the Donovan/Wilson Street Bridge over the Fox River in Batavia, Kane County, Illinois (NE ¼ of Section 22, T39N R8E)

Noel Basquin
City of Batavia
100 N. Island Avenue
Batavia, Illinois 60510

Dear Mr. Basquin:

This office has verified that your proposed activity complies with the terms and conditions of Regional Permit 3, Transportation Projects; Regional Permit 7, Temporary Construction Activities; Regional Permit 10, Bank Stabilization; and the overall RPP under Category II of the Regional Permit Program dated January 1, 2005. The activity may be performed without further authorization from this office provided the activity is conducted in compliance with the terms and conditions of the RPP. Enclosed is your copy of the executed RPP Permit authorization.

This verification expires three years from the date of this letter, and covers only your project as described in your notification and as shown on the plans titled William J. Donovan Bridge Reconstruction, dated March 31, 2006, prepared by Lochner. If the design, location, or purpose of the project is changed, you should contact this office to determine the need for further authorization.

Once you have completed the authorized activity, please sign and return the enclosed compliance certification. If you have any questions, please contact Jaimee W. Hammit of my staff by telephone at (312) 846-5537 or email at jaimee.w.hammit@usace.army.mil.

Sincerely,

Keith A. Wozniak
Chief, West Section

REGIONAL PERMIT PROGRAM

AUTHORIZATION

PERMITTEE: City of Batavia

APPLICATION: LRC-2006-544

ISSUING OFFICE: U.S. Army Corps of Engineers, Chicago District

DATE: JUL 27 2006

You are hereby authorized to perform work in accordance with the terms and conditions specified below. **This verification expires three (3) years from the date indicated above.**

Note: The term "you" and its derivatives, as used in this authorization, means the permittee or any future transferee. The term "this office" refers to the U.S. Army Corps of Engineers, Chicago District.

PROJECT DESCRIPTION: Proposed replacement of the Donovan Bridge/Wilson Street Bridge over the Fox River in Batavia, Kane County, Illinois, (NE ¼ of Section 22, T39N R8E) as described in your notification and as shown on the plans titled William J. Donovan Bridge Reconstruction, dated March 31, 2006, prepared by Lochner.

PROJECT LOCATION: In the Fox River in Batavia, Kane County, Illinois (NE ¼ of Section 22, T39N R8E)

GENERAL CONDITIONS: The above described work is authorized under the terms, conditions and requirements of Regional Permit 3, Transportation Projects; Regional Permit 7, Temporary Construction Activities; Regional Permit 10, Bank Stabilization; and shall follow the General Conditions outlined in the Regional Permit Program dated January 1, 2005.

SPECIAL CONDITIONS: To ensure that the activity has minimal individual and cumulative impacts, the following special conditions are required:

1. This authorization is based on the materials submitted as part of application number LRC-2006-544. Failure to comply with the terms and conditions of this authorization may result in suspension and revocation of your authorization.

2. The time limit for completing the authorized work ends three years from date of issuance. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office at least two months before the above date is reached.

3. You shall comply with the water quality certification issued under Section 401 of the Clean Water Act by the Illinois Environmental Protection Agency for the project.

4. You shall undertake and complete the project as described in the plans titled **William J. Donovan Bridge Reconstruction, dated March 31, 2006, prepared by Lochner,** including all relevant documentation to the project plans as proposed.

5. You shall prepare and submit a soil erosion and sediment control plan for the work area to the Kane County Soil and Water Conservation District (SWCD) for review. You shall provide soil erosion and sediment control protection to all waters of the United States, including wetlands (preserved areas, farmed wetlands, etc.) at the work site prior to commencement of construction activities. **Work authorized herein may not commence until you provide evidence to this office that the SWCD has determined that your plans meets technical standards.**

6. Throughout the duration of construction activities, you shall adhere to all soil erosion and sediment control measures determined to meet technical standards by the SWCD or SMC.

7. There shall be no in-stream work from April 1 - June 15.

8. You shall provide written notification to this office at least ten (10) days prior to the commencement of work indicating the start date and estimated end date of construction. Notification must also include:

a. a copy of the final site/grading plans;

b. evidence of SWCD review.

You may not commence work authorized herein until all of the above items have been received by this office.

9. You are responsible for all work authorized herein and for ensuring that all contractors are aware of the terms and conditions of this authorization. A copy of this authorization must be present at the project site during all phases of construction.

10. You shall notify this office of any proposed modifications to the project, including revisions to any of the plans or documents cited in this authorization. You must receive approval from this office before work affected by the proposed modification is performed.

11. You shall ensure that any wetland areas created or preserved as mitigation for work authorized by this permit shall not be made subject to any future construction and/or fill activities, except for the purposes of enhancing or restoring the mitigation area associated with this permit. All plans are to be approved by this office prior to commencement of any work.

12. You shall notify this office prior to the transfer of this authorization and liabilities associated with compliance with its terms and conditions. The transferee must sign the authorization in the space provided and forward a copy of the authorization to this office.

13. The permittee understands and agrees that, if future operations by the United States require removal, relocation, or other alteration of the structure or work authorized herein, or if, in the opinion of the Secretary of the Army or his authorized representative said structure or work shall cause unreasonable obstruction to the free navigation of the navigable water, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

OTHER INFORMATION:

1. This office has authority to determine if an activity complies with the terms and conditions of the Regional Permit Program (RPP).

2. Limits of RPP authorization:

a. This authorization does not obviate the need to obtain other federal, state, or local authorizations required by law.

b. This authorization does not grant any property rights or exclusive privileges.

c. This authorization does not authorize any injury to the property or rights of others.

d. This authorization does not permit interference with any existing or proposed Federal project.

3. Limits of Federal Liability. The Federal Government does not assume any liability for the following:

a. Damages to the authorized project or uses thereof as a result of other authorized activities or from natural causes.

b. Damages to the authorized project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by this authorized activity.

d. Design or construction deficiencies associated with the authorized work.

e. Damage claims associated with any future modifications, suspension, or revocation of this authorization.

4. Reliance on Applicant's Data. The determination by the issuing office that this activity complies with the terms and conditions of the RPP was made in the reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this authorization at any time the circumstances warrant. In addition, this office may reevaluate the determination that the project qualifies under a RPP. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this authorization.

b. The information provided by you in support of your application proves to have been false, incomplete or inaccurate (see 4 above).

c. Significant new information surfaces which was not considered in reaching the original interest decision.

Such a reevaluation may result in a determination that it is appropriate to suspend, modify or revoke your authorization.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this authorization.

PERMITTEE — DATE 7/17/06

Noel Basquin, City Engineer
City of Batavia
100 N. Island Avenue
Batavia, Illinois 60510

LRC-2006-544
Corps Authorization Number

This authorization becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

For and on behalf of — DATE 7/27/06

John D. Drolet
Colonel, U.S. Army
District Commander

When the structures or work authorized by this authorization are still in existence at the time the property is transferred, the terms and conditions of this authorization will continue to be binding on the new owner(s) of the property. To validate the transfer of this authorization and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

TRANSFEREE — DATE

ADDRESS

TELEPHONE

PERMIT COMPLIANCE

CERTIFICATION

Permit Number: LRC-2006-544

Permittee: City of Batavia

Date of Issuance: JUL 27 2006

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of said permit and if applicable, compensatory wetland mitigation was completed in accordance with the approved mitigation plan.[1]

PERMITTEE _____ DATE _____

Upon completion of the activity authorized by this permit and any mitigation required by the permit, this certification must be signed and returned to the following address:

U.S. Army Corps of Engineers
Chicago District, Regulatory Branch
111 North Canal Street, 6th Floor
Chicago, Illinois 60606-7206

Please note that your permitted activity is subject to compliance inspections by Corps of Engineers representatives. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.

[1] If compensatory mitigation was required as part of your authorization, you are certifying that the mitigation area has been graded and planted in accordance with the approved plan. You are acknowledging that the maintenance and monitoring period will begin after a site inspection by a Corps of Engineers representative or after thirty days of the Corps' receipt of this certification. You agree to comply with all permit terms and conditions, including additional reporting requirements, for the duration of the maintenance and monitoring period.

Illinois Department of
Natural Resources
One Natural Resources Way · Springfield, Illinois 62702-1271
http://dnr.state.il.us

Rod R. Blagojevich, Governor
Sam Flood, Acting Director

July 26, 2006

SUBJECT: Permit No. NE2006064
Wilson Street/Donovan Bridge Replacement
Fox River
Kane County
Application No. 2006094

Mr. Noel Basquin
City of Batavia
100 N. Island Avenue
Batavia, Illinois 60510

Dear Mr. Basquin:

We are enclosing Permit No. NE2006064 authorizing the subject project.

If any changes in the location or plans of the work are proposed, revised plans should be submitted promptly to my office for review and approval before construction begins.

This permit only authorizes the replacement bridge. It does not authorize any temporary work associated with the project, such as the installation of cofferdams.

When the work is completed, please contact my office at 847/608-3100, extension 2025 so we may schedule a final inspection.

Sincerely,

Gary Jereb pr

Gary W. Jereb, P.E., Chief
Northeastern Illinois Regulatory Programs Section

GJ:crw
Enclosure
cc: Chicago District Corps of Engineers (Chic. COE)
Karen Kabbes, Kabbes Engineering, Inc.
IDOT/DOH - Local Roads and Streets

PERMIT NO. NE2006064
DATE: July 26, 2006

State of Illinois
Department of Natural Resources, Office of Water Resources

Permission is hereby granted to:

City of Batavia
100 N. Island Avenue
Batavia, Illinois 60510

to construct a replacement bridge over the Fox River at Wilson Street in the Northeast Quarter of Section 22, Township 39 North, Range 8 East of the Third Principal Meridian in Kane County,

in accordance with an application dated January 30, 2006, and the plans and specifications entitled:

PROPOSED HIGHWAY PLANS, FAU ROUTE 1441, SECTION 00-00059-00-BR, PROJECT BRM-7003-949, KANE COUNTY, WILLIAM J. DONOVAN BRIDGE RECONSTRUCTION, SHEETS 1, 26, 27 AND 46 OF 116, UNDATED, RECEIVED APRIL 4, 2006.

Examined and Recommended:

Gary W. Jereb, Chief
Northeastern Illinois Regulatory
Programs Section

Approval Recommended:

Gary R. Clark, Director
Office of Water Resources

Approved:

Sam Flood, Acting Director
Department of Natural Resources

This PERMIT is subject to the terms and special conditions contained herein.

PERMIT NO. NE2006064

THIS PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:

1) This permit is granted in accordance with the Rivers, Lakes and Streams Act "615 ILCS 5."

2) This permit does not convey title to the permittee or recognize title of the permittee to any submerged or other lands, and furthermore, does not convey, lease or provide any right or rights of occupancy or use of the public or private property on which the activity or any part thereof will be located, or otherwise grant to the permittee any right or interest in or to the property, whether the property is owned or possessed by the State of Illinois or by any private or public party or parties.

3) This permit does not release the permittee from liability for damage to persons or property resulting from the work covered by this permit, and does not authorize any injury to private property or invasion of private rights.

4) This permit does not relieve the permittee of the responsibility to obtain other federal, state or local authorizations required for the construction of the permitted activity; and if the permittee is required by law to obtain approvals from any federal or state agency to do the work, this permit is not effective until the federal and state approvals are obtained.

5) The permittee shall, at the permittee's own expense, remove all temporary piling, cofferdams, false work, and material incidental to the construction of the project. If the permittee fails to remove such structures or materials, the Department may have removal made at the expense of the permittee.

6) In public waters, if future need for public navigation or other public interest by the state or federal government necessitates changes in any part of the structure or structures, such changes shall be made by and at the expense of the permittee or the permittee's successors as required by the Department or other properly constituted agency, within sixty (60) days from receipt of written notice of the necessity from the Department or other agency, unless a longer period of time is specifically authorized.

7) The execution and details of the work authorized shall be subject to the review and approval of the Department. Department personnel shall have the right of access to accomplish this purpose.

8) Starting work on the activity authorized will be considered full acceptance by the permittee of the terms and conditions of the permit.

9) The Department in issuing this permit has relied upon the statements and representations made by the permittee; if any substantive statement or representation made by the permittee is found to be false, this permit will be revoked; and when revoked, all rights of the permittee under the permit are voided.

10) In public waters, the permittee and the permittee's successors shall make no claim whatsoever to any interest in any accretions caused by the activity.

11) In issuing this permit, the Department does not ensure the adequacy of the design or structural strength of the structure or improvement.

12) Noncompliance with the conditions of this permit will be considered grounds for revocation.

13) If the construction activity permitted is not completed on or before December 31, 2009, this permit shall cease and be null and void. When all work is constructed, the permittee shall notify the Department so that a final inspection can be completed.

THIS PERMIT IS SUBJECT TO THE FOLLOWING SPECIAL CONDITION:

a) The Permittee shall not undertake any in-stream construction activities during the fish spawning period from April 1 through June 15 of any year.

Kane – DuPage Soil & Water Conservation District

July 24, 2006

A. Kevin Kassay
H. W. Lochner, Inc.
20 N Wacker Drive, Suite 1200
Chicago, IL 60606

Ref: USACE # LRC-2006-544

Dear Kevin:

I received your revised soil erosion and sedimentation control plan submittal for the William J. Donovan Bridge project located in Batavia, Illinois. Thank you for incorporating our comments into the plan, it will improve the quality of protection for the natural resources, both on and off site. This letter and a set of stamped plans located at the construction office on site, will serve to certify that the erosion and sediment control plans meet Technical Standards.

I will visit the site several times during the course of construction to assess compliance with the specifications and will be glad to address specific issues that may arise during the course of construction.

Sincerely,

Jonathan Koepke, CPESC
Resource Conservationist
Kane-DuPage Soil and Water Conservation District

CC: Jaimee Hammit, USACE
Noel Basquin, City of Batavia

2315 Dean Street, Suite 100 St. Charles, Illinois 60175 (630) 584-7961x3 Fax: (630) 584-9534
www.kanedupageswcd.org

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route FAU 1441 Marked Wilson Street

Section 00-00059-00-BR Project No. BRM 7003-949

County Kane

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.

A. Kevin Kassay, P.E.
Signature

7/27/06
Date

Project Engineer
Title

1. Site Description

a. The following is a description of the construction activity which is the subject of this plan (use additional pages, as necessary):

The project consists of the replacement of the existing William J. Donovan bridge which carries Wilson Street over the Fox River in downtown Batavia. The proposed brdige is a three-span structure (overall length of 233 ft.) with a variable-depth, continuous, post-tensioned concrete slab. The substructure will consist of two concrete wall piers and two concrete full-height abutments. Construction also included the reconstruction of Wilson Street between Shumway Avenue and River Street. Construction includes pavement and sidewalk removal, pavement and sidewalk construction, earth excavation, embankment, grading,storm drainage construction, sanitary sewer construction, water main construction and other miscellaneous 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):

The work is intended to be completed in two major stages, each stage will include:

Demolition of existing bridge and piers and construction of new bridge piers and abutments within the dewatered and cofferdammed work areas.

Excavation and embankment along the job site to grade the proposed roadway and sidewalks.

Construction of storm sewers, sanitary sewers water mains and other utility items

Final roadway and bridge grading and other miscellaneous items

c. The total area of the construction site is estimated to be 2.1 acres.

The total area of the site that it is estimated will be disturbed by excavation, grading or other activities is 1.0 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):

Areas of existing vegetation (wood and grasslands) outside the proposed construction limits shall be indentified by the engineer for preserving and shall be protected from construction activities

Dead, diseased our unsuitable vegetation within the site shall be removed as directed by the engineer along with the required tree removal

As soon as reasonable access is available to all locations where water drains away from the site, silt fence and turbidity barrier (for work in river) shall be installed as shown on the plans and as directed by the Engineer

Bare and sparsely vegetated ground in highly erodable areas as determined by the Engineer shall be temporarily seeded at the beginning of construction when no construction activities are expected within 7 days

Immediately after tree removal is completed, areas which are highly erodable as determined by the Engineer shall be temporarily seeded when no construction activities are expected within 7 days.

Install inlet filters in existing inletes that will remain during construction

(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):

Silt fences and temporary seeding will be used to control runoff on areas exposed by construction activites on the river banks.

Temporary cofferdams and turbidity curtains will be used in the river to keep sediment from traveling downstream from the work area. During dewatering operations, water will be pumped directly into sediment basins, silt traps or a sediment filtration bag. Dewatering directly into storm drainage systems or field tiles will be prohibited.

An oil and debris containment boom meeting the approval of the Engineer shall be kept onsite for immediate deployment in the event of a spill in or adjacent the river

Construction materials and soil stockpiles shall not be placed in the river, on the river banks or in sensitive locations as designated by the Engineer. Any soil stockpiles left in place longer than three days require temporary stabilization.

The Contractor shall remove any construction debris that falls in the active river area at the end of each workday. At the completion of each work stage, the river bottom shall be re-graded to existing condition and all construction debris shall be removed.

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):

The Contractor shall maintain temporary drainage during the project.

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:

The Contractor shall follow the requirements as shown on the soil erosion and sediment control plans and details

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):

During construction the Contractor shall:

1) Clean up and grade the work area to eliminate concentration of runoff.
2) Cover the open ends of pipes in trenches at the close of each work day.
3) Maintain of replace (if specified by the resident engineer) erosion and sediment control items.
4) Remove all construction debris from the river bottom an the close of each work day

All maintenance of erosion control systems will be the responsibility of the Contractor. All locations where vehicles enter and exit the construction site and all other areas subject to erosion should be inspected at least once every seven days and within 24 hours or the end of each ½ in. or greater rainfall event, or an equivalent snowfall (5 in.).

Inspection procedures shall be followed as outlined below.

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).

The only source of non-storm water discharge within the project limits will be from watering of seeding or for erosion control and landscaping purposes.

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 _____ Marked _____

Section _____ Project No. _____

County _____

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

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, 2006

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.

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. It shall be the Contractor's responsibility to determine the actual location of all such facilities. He shall also obtain from the respective utility companies detailed information relative to the location of their facilities and the working schedules of the utility companies for removing or adjusting them.

Revise Article 105.07 of the Standard Specifications to read:

"**105.07 Utility Facilities.** Utilities which are within the limits of the proposed construction are to be moved or removed at no cost to the Contractor except as otherwise provided for in the special provisions or as noted in the plans.

(a) 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 plane, outside of, parallel to, and 600 mm (2 ft) distant at right angles from the plan or revised slope limits and the slope limits extended vertically above the point of intersection of the slope limits and the original cross-section surface.

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 limits of excavation.

(b) 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 longitudinal direction as the roadway.

All reasonable adjustments, as determined by the Engineer, of utilities not shown on the plans, or visible or not identified by markers will be made at no cost to the Contractor except that traffic structures, light poles, etc., that are normally located within the construction limits will not be adjusted unless required by the proposed improvement.

The Contractor may make arrangements for adjustment of utilities outside the limits of proposed construction as defined above 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 as defined above shall be the responsibility of the Contractor unless otherwise provided for.

It is understood and agreed that the Contractor has considered in his bid all of the permanent and temporary utility appurtenances in their present or relocated positions and that no additional compensation will be allowed for any delays, inconvenience, or damage sustained by him due to any interference from the said utility appurtenances or the operation of moving them either by the utility company or by him; or on account of any special construction methods required in prosecuting his work due to the existence of said appurtenances either in their present or relocated positions."

GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET

Effective: July 20, 2006

File Name	√	Pg No.	Title	Effective	Revised
GBSP1			Reserved		
GBSP2			Drilled Shafts	May 1, 2001	Feb 7, 2005
GBSP3			Reserved		
GBSP4			Polymer Modified Portland Cement Mortar	June 7, 1994	Jan 1, 2002
GBSP11			Permanent Steel Sheet Piling	Dec 15,1993	July 20, 2006
GBSP12			Drainage System	June 10,1994	Jan 1, 2002
GBSP13	X	198	Floating Bearing	Oct 13, 1998	June 21, 2004
GBSP14			Jack and Remove Existing Bearings	April 20, 1994	June 27, 2005
GBSP15			Three Sided Precast Concrete Structure	July 12, 1994	Sept 28, 2005
GBSP16			Jacking Existing Superstructure	Jan 11, 1993	Jan 3, 2003
GBSP17			Bonded Preformed Joint Seal	July 12, 1994	Jan 1, 2002
GBSP18			Modular Expansion Joint	May 19, 1994	July 20, 2006
GBSP19			Fabric Reinforced Elastomeric Trough	June 6, 1994	Sept 12, 2003
GBSP21			Cleaning and Painting Contact Surface Areas of Existing Steel Structures	June 30, 2003	Feb 7, 2005
GBSP22	X	203	Cleaning and Painting New Metal Structures	Sept 13, 1994	June 27, 2005
GBSP25			Cleaning and Painting Existing Steel Structures	Oct 2, 2001	Feb 7, 2005
GBSP26			Containment and Disposal of Lead Paint Cleaning Residues	Oct 2, 2001	Aug 18, 2004
GBSP28			Deck Slab Repair	May 15, 1995	Mar 15, 2006
GBSP29			Bridge Deck Microsilica Concrete Overlay	May 15, 1995	Mar 15, 2006
GBSP30	X	210	Bridge Deck Latex Concrete Overlay	May 15, 1995	Dec 12, 2005
GBSP31			Bridge Deck High-Reactivity Metakaolin (HRM) Concrete Overlay	Jan 21, 2000	Mar 15, 2006
GBSP32			Temporary Sheet Piling	Sept 2, 1994	Dec 13, 2002
GBSP33			Pedestrian Truss Superstructure	Jan 13, 1998	July 20, 2006
GBSP34			Concrete Wearing Surface	June 23, 1994	Dec 12, 2005
GBSP35			Silicone Bridge Joint Sealer	Aug 1, 1995	Feb 7, 2005
GBSP36			Surface Preparation and Painting Req. for Weathering Steel	Nov 21, 1997	Dec 12, 2005
GBSP37			Underwater Structure Excavation Protection.	April 1, 1995	Aug 21, 2002
GBSP38			Mechanically Stabilized Earth Retaining Walls.	Feb 3, 1999	Mar 15, 2006
GBSP39			Precast, Prestressed Concrete Deck Beams Stage Constr.	Sept 1, 1994	Jan 1, 2002
GBSP40			Fabric Reinforced Elastomeric Mat	July 14, 2000	Sept 12, 2003
GBSP41			Bridge Joint Sealing System	May 1, 2001	Jan 1, 2002
GBSP42			Drilled Soldier Pile Retaining Wall	Sept 20, 2001	May 16, 2006
GBSP43			Driven Soldier Pile Retaining Wall	Nov 13, 2002	April 25, 2003
GBSP44	X	222	Temporary Soil Retention System	Dec 30, 2002	
GBSP45			Bridge Deck Thin Polymer Overlay	May 7, 1997	July 20, 2006
GBSP46			Geotextile Retaining walls	Sept 19, 2003	Nov 17, 2003
GBSP47	X	224	High Performance Concrete Structures	Aug 5, 2002	Sept 10, 2003
GBSP49			LRFD Piling	Mar 15, 2006	July 20, 2006
GBSP50			Removal of Existing Non-composite Bridge Decks	June 21, 2004	Feb 7, 2005
GBSP51	X	227	Pipe Underdrain for Structures	May 17, 2000	Dec 12, 2005
GBSP52			Porous Granular Embankment (Special)	Sept 28, 2005	July 20, 2006
GBSP53			Structural Repair of Concrete	Mar 15, 2006	
GBSP54	X	228	Protective Coat	Mar 15, 2006	

GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET

LIST ADDITIONAL SPECIAL PROVISIONS BELOW
PROTECTION OF EXISTING BUILDINGS AND STRUCTURES (SPECIAL)
BRIDGE APPROACH PAVEMENT (SPECIAL)
RIGID FOAM INSULATION (SPECIAL)
DRILL AND GROUT DOWEL BARS (SPECIAL)
REMOVE EXISTING CONCRETE ARCH BRIDGE (SPECIAL)
COFFERDAMS (SPECIAL)
TEMPORARY PIER SUPPORT (SPECIAL)
MICROPILE, 200 TON (SPECIAL)
STRIP SEAL EXPANSION JOINT (SPECIAL)
BAR COUPLERS (SPECIAL)
CONCRETE FILL (SPECIAL)
FURNISHING, INSTALLING AND STRESSING POST-TENSIONING STRANDS (SPECIAL)
RUSTICATION FINISH TYPE I (SPECIAL)
RUSTICATION FINISH TYPE II (SPECIAL)
BRIDGE RAILING (SPECIAL)
OUTLOOK RAILING (SPECIAL)
STAIR RAILING (SPECIAL)
RIVERWALK RAILING (SPECIAL)
REMOVE, STORE AND RE-INSTALL EXISTING MONUMENT (SPECIAL)
NORTHWEST STAIR (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE – DIES (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE - BRIDGE CURB (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE - OUTLOOK CURB (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE - POST BASE (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE - BENCH PLANTER SYSTEM (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE - SOUTHWEST STAIR SYSTEM (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE - SOUTHEAST STAIR SYSTEM (SPECIAL)
ARCHITECTURAL PRE-CAST CONCRETE - NORTHEAST STAIR SYSTEM (SPECIAL)

FLOATING BEARINGS
Effective: October 13, 1988
Revised: June 21,2004

Description. This work shall consist of furnishing and installing floating (pot type) bearing assemblies as shown on the plans.

Floating bearings shall be the following types:

Fixed:	Allows rotation in any direction and fixed against translation.
Guided Expansion:	Allows rotation in any direction and translation in limited directions.
Non-Guided Expansion:	Allows rotation in any direction and translation in any direction.

The floating bearings shall be of the type specified and designed for the loads shown on the plans. The design of the top and bottom bearing plates are based on detail assumptions which are not applicable to all suppliers and may require modifications depending on the supplier chosen by the Contractor. The overall depth dimension for the floating bearings shall be as specified on the plans. The horizontal dimensions shall be limited to the available bearing seat area. Any modifications required to accommodate the bearings chosen shall be submitted to the Engineer for approval prior to ordering materials. Modifications required shall be made at no additional cost to the State. Inverted pot bearing configurations will not be permitted.

The Contractor shall comply with all manufacturer's material, fabrication and installation requirements specified.

Submittals. Shop drawings shall be submitted to the Engineer for approval according to Article 105.04 of the Standard Specifications. In addition the Contractor shall furnish certified copies of the bearing manufacturer's test reports on the physical properties of the component materials for the bearings to be furnished and a certification by the bearing manufacturer stating the bearing assemblies furnished conform to all the requirements shown on the plans and as herein specified. Submittals with insufficient test data and supporting certifications will be rejected.

Materials. The materials for the floating bearing assemblies shall be according to the following:

(a) Elastomeric Materials. The rubber disc shall be according to Article 1083.02 of the Standard Specifications for "55 Duro" rubber.

(b) Polytetrafluoroethylene (TFE) Material. The TFE material shall be according to Article 1083.03 of the Standard Specifications.

(c) Stainless Steel Sheets: The stainless steel sheets shall be of the thickness specified and shall be according to ASTM A 240, Type 302 or 304. The sliding

surface shall be polished to a bright mirror finish less than 510 nm (20 micro-in.) root mean square.

(d) Structural Steel. All structural steel used in the bearing assemblies shall be according to AASHTO M 270M Grade 345 (M 270, Grade 50), unless otherwise specified.

(e) Threaded studs. The threaded stud, when required, shall conform to the requirements of AASHTO M 164M (M 164).

Fabrication and Installation of Floating Bearings. The bearings shall be complete factory-produced assemblies. They shall provide for rotation in all directions and for sliding, when specified, in directions as indicated on the plans. All bearings shall be furnished as a complete unit from one manufacturing source. All material used in the manufacture shall be new and unused with no reclaimed material incorporated into the finished assembly.

When directed by the Engineer, the manufacturer shall furnish random samples of component materials used in the bearings for testing by the Department.

The bearings furnished shall be manufactured so that the rotational capability is provided by an assembly having a rubber disc of proper thickness, confined in a manner so it behaves like a fluid. The disc shall be installed, with a snug fit, into a steel cylinder and confined by a tight fitting piston. The outside diameter of the piston shall be no more than 750 microns (0.03 in.) less than the inside diameter of the cylinder at the interface level of the piston and rubber disc. The sides of the piston shall be beveled. TFE sheets shall be attached to the top and bottom of the rubber disc to facilitate rotation of the rubber disc. Suitable brass sealing rings shall be provided to prevent any extrusion between piston and cylinder.

The translation capability for both guided and non-guided expansion bearings shall be provided by means of a polished stainless steel sliding plate that bears on a TFE sheet bonded and recessed to the top surface of the piston. The sliding element of expansion bearings shall be restrained against movement in the fixed direction by exterior guide bars capable of resisting the horizontal forces or 20 percent of the vertical design load on the bearing applied in any direction, whichever is greater. The sliding surfaces of the guide bar shall be of TFE sheet and stainless steel. Guiding off of the fixed base, or any extension of it, will not be permitted.

Structural steel bearing plates shall be fabricated according to Article 505.04(l) of the Standard Specifications. Prior to shipment the exposed edges and other exposed portions of the structural steel bearing plates shall be cleaned and painted according to Articles 506.03 and 506.04 of the Standard Specifications. Painting shall be with the paint specified for shop painting of structural steel. During cleaning and painting the stainless steel, TFE sheet and neoprene shall be protected from abrasion and paint.

TFE sheets shall be bonded to steel under factory controlled conditions using heat and pressure for the time required to set the epoxy adhesive used. The TFE sheet shall be free from bubbles and the sliding surface shall be burnished to an absolutely smooth surface.

The steel piston and the steel cylinder shall each be machined from a solid piece of steel. The steel base cylinder shall be either integrally machined, recessed into with a snug fit, or continuously welded to its bottom steel bearing plate.

Packaging. Each floating bearing assembly shall be fully assembled at the manufacturing plant and delivered to the construction site as complete units. The assemblies shall be packaged, crated or wrapped so the assemblies will not be damaged during handling, transporting and shipping. The bearings shall be held together with removable restraints so sliding surfaces are not damaged.

Centerlines shall be marked on both top and base plates for alignment in the field. The bearings shall be shipped in moisture-proof and dust-proof covers.

Testing. Each floating bearing assembly shall be load tested to 150 percent of the rated capacity at a 2 percent slope by the manufacturer prior to shipment. The load of 150 percent of the rated capacity shall be maintained for at least 30 minutes. Any bearings showing failure of the sealing rings or other component parts after this load test shall be replaced. The Contractor shall furnish to the Department a notarized certification from the bearing manufacturer stating the floating bearings have been load tested as specified. The Department reserves the right to perform the specified load test on one or more of the furnished bearings. If the tested bearing shows failure it shall be replaced and the remaining bearings shall be load tested for acceptance at the Contractor's expense.

Shear Inhibited Disc Type Bearing. Shear Inhibited Disc type bearing assemblies may be used in lieu of the Floating (Pot type) Bearing assemblies at the option of the Contractor. All requirements specified for floating bearings shall be applicable for the shear inhibited disc type bearings except as follows:

(a) The Structural Element shall be restricted from shear by the pin and ring design and need not be completely confined as with the Floating Bearing design.

(b) The Structural Element shall be molded of Polyether Urethane compound and shall be monolithic. The physical properties of the Polyether Urethane shall be according to one of the following requirements:

PHYSICAL PROPERTY	ASTM TEST METHOD	REQUIREMENTS			
		COMPOUND A		COMPOUND B	
		MIN.	MAX.	MIN.	MAX.
Hardness, Type D durometer	D 2240	46	50	60	64
Tensile Stress, kPa (psi) At 100% elongation	D 412	10,350 kPa (1500 psi)	--	13,800 kPa (2000 psi)	--
Tensile Stress, kPa (psi) At 300% elongation	D 412	19,300 kPa (2800 psi)	--	25,500 kPa (3700 psi)	--
Tensile Strength, kPa (psi)	D 412	27,600 kPa (4000 psi)	--	34,500 kPa (5000 psi)	--
Ultimate Elongation, %	D 412	300	--	220	--
Compression Set 22 hr. at 70 °C (158 °F), %	D 395	--	40	--	40

Bearings shall be erected according to Article 505.08(f) of the Standard Specifications.

Exposed edges and other exposed portions of the structural steel plates shall be field painted as specified for Structural Steel.

Basis of Payment. This work will be paid for at the contract unit price each for FLOATING BEARINGS, FIXED; FLOATING BEARINGS, GUIDED EXPANSION; or FLOATING BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

When the fabrication and erection of floating bearings is accomplished under separate contracts, the applicable requirements of Article 505.09 shall apply.

Fabricated floating bearings and other materials complying with the requirements of this item, furnished and accepted, will be paid for at the contract unit price each for FURNISHING FLOATING BEARINGS, FIXED, FURNISHING FLOATING BEARINGS, GUIDED EXPANSION or FURNISHING FLOATING BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

Storage and care of fabricated floating bearings and other materials complying with the requirements of this item by the Fabrication Contractor beyond the specified storage period, will be paid for at the contract unit price per calendar day for STORAGE OF FLOATING BEARINGS if a pay item is provided for in the contract, or will be paid for according to Article 109.04 if a pay item is not provided in the contract.

Floating bearings and other materials fabricated under this item erected according to the requirements of the specifications, and accepted, will be paid for at the contract unit price each for ERECTING FLOATING BEARINGS, FIXED, ERECTING FLOATING BEARINGS, GUIDED EXPANSION or ERECTING FLOATING BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

CLEANING AND PAINTING NEW METAL STRUCTURES
Effective Date: September 13, 1994
Revised Date: June 27, 2005

Description. The material and construction requirements that apply to cleaning and painting new structural steel shall be according to the applicable portion of Sections 506 of the Standard Specifications except as modified herein. The three coat paint system shall be the system as specified on the plans and as defined herein.

Materials. All materials to be used on an individual structure shall be produced by the same manufacturer. The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material must be tested and approved by that bureau before use.

The paint materials shall meet the requirements of the following articles of the Standard Specification:

Item	Article
(a) Inorganic Zinc-Rich Primer	1008.22
(b) Waterborne Acrylic	1008.24
(c) Aluminum Epoxy Mastic	1008.25
(d) Organic Zinc-Rich Primer (Note 1)	
(e) Epoxy Intermediate (Note 1)	
(f) Aliphatic Urethane (Note 1)	

Note 1: These material requirements shall be according to the Special Provision for the Organic Zinc-Rich Paint System.

Submittals. At least 30 days prior to beginning field painting, the Contractor shall submit for the Engineer's review and acceptance, the following applicable plans, certifications and information for completing the field work. Field painting can not proceed until the submittals are accepted by the Engineer. Qualifications, certifications and QC plans for shop cleaning and painting shall be available for review by the QA Inspector.

a) Contractor/Personnel Qualifications. Except for miscellaneous steel items such as bearings, side retainers, expansion joint devices, and other items allowed by the Engineer, or unless stated otherwise in the contract, the shop painting Contractors shall be certified to perform the work as follows: the shop painting Contractor shall possess AISC Sophisticated Paint Endorsement or SSPC-QP3 certification. Evidence of current qualifications shall be provided.

Personnel managing the shop and field Quality Control program(s) for this work shall possess a minimum classification as a National Association of Corrosion Engineers (NACE) Coating Inspector Technician, or shall provide evidence of successful inspection of 3 projects of similar or greater complexity and scope that have been completed in the last 2 years. Copies of the certification and/or experience shall be provided.

The personnel performing the QC tests for this work shall be trained in coatings inspection and the use of the testing instruments. Documentation of training shall be provided.

b) Quality Control (QC) Program. The shop and field QC Programs shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings. The field program shall incorporate the IDOT Quality Control Daily Report form, as supplied by the Engineer.

c) Field Cleaning and Painting Inspection Access Plan. The inspection access plan for use by Contractor QC personnel for ongoing inspections and by the Engineer during Quality Assurance (QA) observations.

d) Surface Preparation/Painting Plan. The surface preparation/painting plan shall include the methods of surface preparation and type of equipment to be utilized for solvent cleaning, abrasive blast cleaning, washing, and power tool cleaning. The plan shall include the manufacturer's names of the materials that will be used, including Product Data Sheets and Material Safety Data Sheets (MSDS).

   A letter or written instructions from the coating manufacturer shall be included, indicating the required drying time for each coat at the minimum, normal, and maximum application temperatures before the coating can be exposed to temperatures or moisture conditions that are outside of the published application parameters.

Field Quality Control (QC) Inspections. The Contractor shall perform first line, in process QC inspections of each phase of the work. The Contractor shall implement the submitted and accepted QC Program to insure that the work accomplished complies with these specifications. The Contractor shall use the IDOT Quality Control Daily Report form supplied by the Engineer to record the results of quality control tests. The completed reports shall be turned into the Engineer before work resumes the following day.

The Contractor shall have available at the shop or on the field site, all of the necessary inspection and testing equipment. The equipment shall be available for the Engineer's use when requested.

Field Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all phases of the work. The Engineer's observations in no way relieve the Contractor of the responsibility to provide all necessary daily QC inspections of his/her own and to comply with all requirements of this Specification.

The Engineer has the right to reject any work that was performed without adequate provision for QA observations.

The Engineer will issue a Non-Conformance Report when cleaning and painting work is found to be in violation of the specification requirements, and is not corrected to bring it into compliance before proceeding with the next phase of work.

Inspection Access and Lighting. The Contractor shall facilitate the Engineer's observations as required, including allowing ample time to view the work. The Contractor shall furnish, erect and move scaffolding or other mechanical equipment to permit close observation of all surfaces to be cleaned and painted. This equipment shall be provided during all phases of the work. Examples of acceptable access structures include:

- Mechanical lifting equipment, such as, scissor trucks, hydraulic booms, etc.
- Platforms suspended from the structure comprised of trusses or other stiff supporting members and including rails and kick boards.
- Simple catenary supports are permitted only if independent life lines for attaching a fall arrest system according to Occupational Safety and Health Administration (OSHA) regulations are provided.

When the surface to be inspected is more than 1.8 m (6 ft) above the ground or water surface, the Contractor shall provide the Engineer with a safety harness and a lifeline according to OSHA regulations. The lifeline and attachment shall not direct the fall into oncoming traffic. The Contractor shall provide a method of attaching the lifeline to the structure independent of the inspection facility or any support of the platform. When the inspection facility is more than 800 mm (2 1/2 ft) above the ground, the Contractor shall provide an approved means of access onto the platform.

The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 325 LUX (30 foot candles). Illumination for cleaning and painting, including the working platforms, access, and entryways shall be at least 215 LUX (20 foot candles).

Construction Requirements. The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Painted surfaces damaged by any Contractor's operation shall be removed and repainted, as directed by the Engineer, at the Contractor's expense.

The Contractor shall comply with the provisions of the Illinois Environmental Protection Act. Paint drips, spills, and overspray are not permitted to escape into the air or onto any other surfaces or surrounding property not intended to be painted. Containment shall be used to control paint drips, spills, and overspray, and shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur, unless the containment design necessitates action at lower wind speeds. The contractor shall evaluate project-specific conditions to determine the specific type and extent of containment needed to control the paint emissions and shall submit a plan for containing or controlling paint debris (droplets, spills, overspray, etc.) to the Engineer for approval prior to starting the work. Approval shall not relieve the Contractor of their ultimate responsibility for controlling paint debris from escaping the work zone.

Surface and Weather Conditions. Surfaces to be painted after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt, or moisture does not come in contact with surfaces cleaned or painted that day.

The surface temperature shall be at least 3°C (5°F) above the dew point during final surface preparation operations. The paint manufacturers' published literature shall be followed for specific temperature, dew point, and humidity restrictions during the application of each coat.

The Contractor shall monitor temperature, dew point, and humidity every 4 hours during surface preparation and coating application in the specific areas where the work is being performed. The frequency of monitoring shall increase if weather conditions are changing. The Engineer has the right to reject any work that was performed under unfavorable weather conditions. Rejected work shall be removed, recleaned, and repainted at the Contractor's expense.

Seasonal Restrictions on Field Cleaning and Painting. Field cleaning and painting work shall be accomplished between April 15 and October 31 unless authorized otherwise by the Engineer in writing.

Inorganic Zinc-rich/ Waterborne Acrylic Paint system. This system shall be for shop and field application of the coating system, shop application of the intermediate and top coats will not be allowed.

In the shop, all structural steel designated to be painted shall be given one coat of inorganic zinc rich primer. In the field, before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 7 MPa (1000 psi) and 34 MPa (5000 psi) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3 and spot primed with aluminum epoxy mastic. The structural steel shall then receive one full intermediate coat and one full topcoat of waterborne acrylic paint.

a) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.

b) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:
   Zinc Primer: 75 microns (3 mils) min., 150 microns (6 mils) max.
   Epoxy Mastic: 125 microns (5 mils) min., 180 microns (7 mils) max.
   Intermediate Coat: 50 microns (2 mils) min., 100 microns (4 mils) max.
   Topcoat: 50 microns (2 mils) min., 100 microns (4 mils) max.

The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 180 and 355 microns (7 and 14 mils).

c) The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.

d) Damage to the paint system shall be spot cleaned using SSPC-SP3. The cleaned areas shall be spot painted with a penetrating sealer as recommended by the manufacturer, which shall overlap onto the existing topcoat. Then the aluminum epoxy mastic shall be spot applied not to go beyond the area painted with the sealer. The acrylic intermediate and topcoat shall be spot applied to the mastic with at least a 150 mm (6 inch) overlap onto the existing topcoat.

Organic Zinc-Rich/ Epoxy/ Urethane Paint System. This system shall be for full shop application of the coating system, all contact surfaces shall be masked off prior to application of the intermediate and top coats.

Additional Surface Preparation. In addition to the requirements of Section 3.2.9 of the AASHTO/AWS D1.5M/D1.5:2002 Bridge Welding Code (breaking thermal cut corners of stress carrying members), rolled and thermal cut corners to be painted with organic zinc primer shall be broken if they are sharper than a 1.5 mm (1/16 in.) radius. Corners shall be broken by a single pass of a grinder or other suitable device at a 45° angle to each adjoining surface prior to final blast cleaning, so the resulting corner approximates a 1.5 mm (1/16 in.) or larger radius after blasting. Surface anomalies (burrs, fins, deformations) shall also be treated to meet this criteria before priming.

In the shop, all structural steel designated to be painted shall be given one coat of organic zinc rich primer. Before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 7 MPa (1000 psi) and 34 MPa (5000 psi) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3, and the structural steel shall then receive one full intermediate coat of epoxy and one full topcoat of aliphatic urethane.

(a) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.

(b) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:
organic Zinc Primer: 75 microns (3 mils) min., 125 microns (5 mils) max.
Aluminum Epoxy Mastic: 125 microns (5 mils) min., 180 microns (7 mils) max.

Epoxy Intermediate Coat: 75 microns (3 mils) min., 150 microns (6 mils) max.
Aliphatic Urethane Top Coat: 65 microns (2.5 mils) min., 100 microns (4 mils) max.

(c) The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 215 and 375 microns (8.5 and 15 mils).

(d) When specified on the plans or as requested by the Contractor, and approved by the Engineer, the epoxy intermediate and aliphatic urethane top coats shall be applied in the shop. All faying surfaces of field connections shall be masked off after priming and shall not receive the intermediate or top coats in the shop. The intermediate and top coats for field connections shall be applied, in the field, after erection of the structural steel is completed. The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.

(e) Erection and handling damage to the shop applied system shall be spot cleaned using SSPC-SP3. The surrounding coating at each repair location shall be feathered for a minimum distance of 40 mm (1 1/2 in.) to achieve a smooth transition between the prepared areas and the existing coating. The existing coating in the feathered area shall be roughened to insure proper adhesion of the repair coats. The areas cleaned to bare metal shall be spot painted with aluminum epoxy mastic. The intermediate and finish coat shall be spot applied to with at least a 150 mm (6 inch) overlap onto the existing finish coat.

Aluminum Epoxy Mastic/ Waterborne Acrylic Paint system. This system shall be for shop or field application of the entire coating system.

Before priming with aluminum epoxy mastic the steel the surfaces to be primed shall be prepared according to SSPC SP6 for Commercial Blast Cleaning. In the field, before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 7 MPa (1000 psi) and 34 MPa (5000 psi) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3 and spot primed with aluminum epoxy mastic. The structural steel shall then receive one full intermediate coat of aluminum epoxy mastic and one full topcoat of waterborne acrylic paint.

d) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.

e) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:
Epoxy Mastic Primer: 125 microns (5 mils) min., 180 microns (7 mils) max.
Epoxy Mastic Intermediate Coat: 125 microns (5 mils) min., 180 microns (7 mils) max.

Acrylic Topcoat: 50 microns (2 mils) min., 100 microns (4 mils) max.

The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 300 and 460 microns (12 and 18 mils).

f) The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.

d) Damage to the paint system shall be spot cleaned using SSPC-SP3. The cleaned areas shall be spot painted with a penetrating sealer as recommended by the manufacturer, which shall overlap onto the existing topcoat. Then the aluminum epoxy mastic shall be spot applied not to go beyond the area painted with the sealer. The acrylic topcoat shall be spot applied to the mastic with at least a 150 mm (6 inch) overlap onto the existing topcoat.

The paint manufacturer's product data sheets shall be available for QA review in the shop and submitted to the Engineer prior to start of field work and the requirements as outlined in the data sheets shall be followed.

Special Instructions.

Painting Date/System Code. At the completion of the work, the Contractor shall stencil in contrasting color paint the date of painting the bridge, the painting Contractors name, and the paint type code from the Structure Information and Procedure Manual for the system used. The letters shall be capitals, not less than 50 mm (2 in.) and not more than 75 mm (3 in.) in height.

The stencil shall contain the following wording "PAINTED BY (insert the name of the painting Contractor)" and shall show the month and year in which the painting was completed, followed by "CODE S" for the Inorganic Zinc/ Acrylic System, "CODE X" for the Organic Zinc/ Epoxy/ Urethane System, "CODE AB" for the Organic Zinc/ Epoxy/ Urethane System (shop applied), and "CODE U" for the Aluminum Epoxy Mastic/ Acrylic System all stenciled on successive lines. This information shall be stenciled on the cover plate of a truss end post near the top of the railing, or on the outside face of an outside stringer near both ends of the bridge facing traffic, or at some equally visible surface designated by the Engineer.

Method of Measurement. Shop cleaning and painting new structures will not be measured for payment. Field cleaning and painting will not be measured for payment except when performed under a contract that contains a separate pay item for this work.

Basis of Payment. This work will be paid for according to Article 506.07.

BRIDGE DECK LATEX CONCRETE OVERLAY
Effective: May 15, 1995
Revised: December 12, 2005

This work shall consist of the preparation of the existing concrete bridge deck and the construction of a latex overlay to the specified thickness. The minimum thickness of the overlay shall be 60 mm (2 1/4 in.).

Materials. Materials shall meet the following Articles of Section 1000:

Item	Section
(a) Latex/Portland Cement Concrete (Note 1) (Note 2)	1020
(b) Grout (Note 3)	
(c) Rapid Set Materials (Note 4)	
(d) Concrete Curing Materials (Note 5)	

Note 1: This item shall include the initial on site technical assistance of the supplier of the latex admixture. Further technical assistance shall be available at the request of the Engineer. Any cement found to be incompatible in any respect for the latex overlay shall be removed from the work immediately and replaced with compatible cement at the Contractor's expense.

The latex admixture shall be a uniform, homogeneous, non-toxic, film-forming, polymeric emulsion in water to which all stabilizers have been added at the point of manufacture. The latex admixture shall not contain any chlorides and shall contain 46 to 49 percent solids.

The Contractor shall submit a manufacturer's certification that the latex emulsion meets the requirements of FHWA Research Report RD-78-35, Chapter VI. The certificate shall include the date of manufacture of the latex admixture, batch or lot number, quantity represented, manufacturer's name, and the location of the manufacturing plant. The latex emulsion shall be sampled and tested in accordance with RD-78-35, Chapter VII, Certification Program.

The latex admixture shall be packaged and stored in containers and storage facilities which will protect the material from freezing and from temperatures above 30°C (85°F). Additionally, the material shall not be stored in direct sunlight and shall be shaded when stored outside of buildings during moderate temperatures.

Note 2: Cement shall be Type I portland cement. Fine aggregate shall be natural sand and the coarse aggregate shall be crushed stone or crushed gravel. The gradation of the coarse aggregates shall be CA 13, CA 14 or CA 16.

Note 3: Grout. The grout for bonding new concrete to old concrete shall be proportioned by mass (weight) and mixed at the job site, or it may be ready-mixed if agitated while at

the job site. The bonding grout shall consist of one part portland cement and two parts sand, mixed with sufficient water to form a slurry. The bonding grout shall have a consistency allowing it to be scrubbed onto the prepared surface with a stiff brush or broom leaving a thin, uniform coating that will not run or puddle in low spots. Grout that can not be easily and evenly applied or has lost its consistency may be rejected by the Engineer. Grout that is more than two hours old shall not be used.

At the option of the Contractor the grout may be applied by mechanical applicators. If this option is chosen, the sand shall be eliminated from the grout mix.

Note 4: Rapid set materials shall be obtained from the Department's approved list of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs.

Note 5: Cotton mats shall consist of a cotton fill material, minimum 400 g/sq m (11.8 oz/sq yd), covered with unsized cloth or burlap, minimum 200 g/sq m (5.9 oz/sq yd), and be tufted or stitched to maintain stability. Cotton mats shall be free from tears and in good condition.

Mixture Design. The latex concrete shall contain the following approximate units of measure or volumes per cubic meter (cubic yard):

Type I Portland Cement	390 kg (658 lb.)
Latex Admixture	121.3 L (24.5 gal)
Coarse Aggregate	42 to 50 percent by mass (weight) of total aggregate
Water (including free moisture on the fine and coarse aggregates)	93.1 kg (157 lb.) maximum

No air entraining admixtures shall be added to the mix.

This mix design is based on a specific gravity of 2.65 for both the fine and the coarse aggregates. The mix will be adjusted by the Engineer to compensate for aggregate specific gravity and moisture.

The latex concrete shall meet the following requirements:

Slump shall be according to Article 1020.12:	75 to 150 mm (3 to 6 in.)
Air Content shall be according to Article 1020.12:	7 percent maximum
Water-cement ratio (considering all the nonsolids in the latex admixture as part of the total water)	0.30 to 0.40

Compressive Strength (14 days)	27,500 kPa (4000 psi) minimum
Flexural Strength (14 days)	4,650 kPa (675 psi)

Equipment: The equipment used shall be subject to the approval of the Engineer and shall meet the following requirements:

(a) Surface Preparation Equipment. Surface preparation equipment shall be according to the applicable portions of Section 1100 and the following:

(1) Sawing Equipment. Sawing equipment shall be a concrete saw capable of sawing concrete to the specified depth.

(2) Mechanical Blast Cleaning Equipment. Mechanical blast cleaning may be performed by high-pressure waterblasting or shotblasting. Mechanical blast cleaning equipment shall be capable of removing weak concrete at the surface, including the microfractured concrete surface layer remaining as a result of mechanical scarification, and shall have oil traps.

Mechanical high-pressure waterblasting equipment shall be mounted on a wheeled carriage and shall include multiple nozzles mounted on a rotating assembly. The distance between the nozzles and the deck surface shall be kept constant and the wheels shall maintain contact with the deck surface during operation.

(3) Hand-Held Blast Cleaning Equipment. Blast cleaning using hand-held equipment may be performed by high-pressure waterblasting or abrasive blasting. Hand-held blast cleaning equipment shall have oil traps.

Hand-held high-pressure waterblasting equipment that is used in areas inaccessible to mechanical blast cleaning equipment shall have a minimum pressure of 48 MPa (7,000 psi).

(4) Mechanical Scarifying Equipment. Scarifying equipment shall be a power-operated, mechanical scarifier capable of uniformly scarifying or removing the old concrete surface and new patches to the depths required in a satisfactory manner. Other types of removal devices may be used if their operation is suitable and they can be demonstrated to the satisfaction of the Engineer.

(5) Hydro-Scarification Equipment. The hydro-scarification equipment shall consist of filtering and pumping units operating with a computerized, self-propelled robotic machine with gauges and settings that can be easily verified. The equipment shall use potable water according to Section 1002. Operation of the equipment shall be performed and supervised by qualified personnel certified by the equipment manufacturer. Evidence of certification shall be presented to the Engineer. The equipment shall be capable of removing concrete to the specified depth and be

capable of removing rust and old concrete particles from exposed reinforcement bars. The hydro-scarification equipment shall be calibrated before being used and shall operate at a uniform pressure sufficient to remove the specified depth of concrete in a timely manner.

(6) Vacuum Cleanup Equipment. The equipment shall be equipped with fugitive dust control devices capable of removing wet debris and water all in the same pass. Vacuum equipment shall also be capable of washing the deck with pressurized water prior to the vacuum operation to dislodge all debris and slurry from the deck surface.

(7) Power-Driven Hand Tools. Power-driven hand tools will be permitted including jackhammers lighter than the nominal 20 kg (45 lb.) class. Jackhammers or chipping hammers shall not be operated at an angle in excess of 45 degrees measured from the surface of the slab.

(b) Pull-off Test Equipment. Equipment used to perform pull-off testing shall be either approved by the Engineer, or obtained from one of the following approved sources:

James Equipment
007 Bond Tester
800-426-6500

Germann Instruments, Inc.
BOND-TEST Pull-off System
847-329-9999

SDS Company
DYNA Pull-off Tester
805-238-3229

Pull-off test equipment shall include all miscellaneous equipment and materials to perform the test and clean the equipment, as indicated in the Illinois Test procedure 304 and 305 "Pull-off Test (Surface or Overlay Method)". Prior to the start of testing, the Contractor shall submit to the Engineer a technical data sheet and material safety data sheet for the epoxy used to perform the testing. For solvents used to clean the equipment, a material safety data sheet shall be submitted.

(c) Concrete Equipment: A mobile Portland cement concrete plant shall be used for Latex Concrete and shall be according to Articles 1020.12, 1103.04 and the following:

(1) The device for proportioning water shall be accurate within one percent.

(2) The mixer shall be a self-contained, mobile, continuous mixer used in conjunction with volumetric proportioning.

(3) The mixer shall be calibrated prior to every placement of material or as directed by the Engineer.

(d) Finishing Equipment. Finishing equipment shall be according to Article 503.03.

(e) Mechanical Fogging Equipment. Mechanical fogging equipment shall consist of a mechanically operated, pressurized system using a triple headed nozzle or an equivalent nozzle. The fogging nozzle shall be capable of producing a fine, fog mist that will increase the relative humidity of the air just above the fresh concrete surface without accumulating any water on the concrete. The fogging equipment shall be mounted on either the finishing equipment or a separate foot bridge. Controls shall be designed to vary the volume of water flow, be easily accessible and immediately shut off the water when in the off position.

(f) Hand-Held Fogging Equipment. Hand-held fogging equipment shall use a triple headed nozzle or an equivalent nozzle. The fogging nozzle shall be capable of producing a fine, fog mist that will increase the relative humidity of the air just above the fresh concrete surface without accumulating any water on the concrete.

Construction Requirements: Sidewalks, curbs, drains, reinforcement and/or existing transverse and longitudinal joints which are to remain in place shall be protected from damage during scarification and cleaning operations. All damage caused by the Contractor shall be corrected, at the Contractor's expense, to the satisfaction of the Engineer.

The Contractor shall control the runoff water generated by the various construction activities in such a manner as to minimize, to the maximum extent practicable, the discharge of construction debris into adjacent waters, and shall properly dispose of the solids generated according to Article 202.03. Runoff water will not be allowed to constitute a hazard on adjacent or underlying roadways, waterways, drainage areas or railroads nor be allowed to erode existing slopes.

(a) Deck Preparation:

(1) Bridge Deck Scarification. The scarification work shall consist of removing the designated concrete deck surface using mechanical or hydro-scarifying equipment as specified. The areas designated shall be scarified uniformly to the depth as specified on the plans. In areas of the deck not accessible to the scarifying equipment, power-driven hand tools will be permitted. Power driven hand tools shall be used for removal around areas to remain in place.

A trial section on the existing deck surface will be designated by the Engineer to demonstrate that the equipment, personnel and methods of operation are capable of producing results satisfactory to the Engineer. The trial section will consist of approximately 3 sq m (30 sq ft).

Once the settings for the equipment are established, they shall not be changed without the permission of the Engineer. The removal shall be verified, as necessary, at least every 5 m (16 ft) along the cutting path. If sound concrete is being removed below the desired depth, the equipment shall be reset or recalibrated.

If the use of hydro-scarification equipment is specified, the Contractor may use mechanical scarification equipment to remove an initial depth of concrete provided

that the last 6 mm (1/4 in.) of removal is accomplished with hydro-scarification equipment. If the Contractor's use of mechanical scarifying equipment results in exposing, snagging, or dislodging the top mat of reinforcing steel, the scarifying shall be stopped immediately and the remaining removal shall be accomplished using the hydro-scarification equipment. All damage to the existing reinforcement resulting from the Contractor's operation shall be repaired or replaced at the Contractor's expense as directed by the Engineer. Replacement shall include the removal of any additional concrete required to position or splice the new reinforcing steel. Undercutting of exposed reinforcement bars shall only be as required to replace or repair damaged or corroded reinforcement. Repairs to existing reinforcement shall be according to the Special Provision for "Deck Slab Repair".

After hydro-scarification the deck shall be vacuum cleaned in a timely manner before the water and debris are allowed to dry and re-solidify to the deck. The uses of alternative cleaning and debris removal methods to minimize driving heavy vacuum equipment over exposed deck reinforcement may be used subject to the approval of the Engineer.

(2) Deck Patching. After bridge deck scarification, all designated patching, except as note below, shall be completed according to the Special Provision for "Deck Slab Repair". All full depth patching shall be completed prior to final surface preparation. When hydro-scarification is specified, partial depth patches may be fill with overlay material at the time of overlay placement.

All patches placed prior to overlay placement shall be struck off and then roughened with a suitable stiff bristled broom or wire brush to provide a rough texture designed to promote bonding of the overlay. Hand finishing of the patch surface shall be kept to a minimum to prevent overworking of the surface.

After scarification, the deck shall be thoroughly cleaned of broken concrete and other debris. The Engineer will sound the scarified deck and all remaining unsound areas will be marked for additional removal and/or repairs as applicable. If the bottom mat of reinforcement is exposed, that area shall be defined as a full depth repair.

In areas where hydro-scarification is specified, No separate payment for partial depth patching will be made regardless of whether it was detailed in the plans or not. Just prior to performing hydro-scarification, the deck shall be sounded, with unsound areas marked on the deck to assist the hydro-scarification process in performing the partial depth removal simultaneously with the hydro-scarification operation. If in the opinion of the Engineer additional removal is required after the hydro-scarification process, which could not have been anticipated or accounted for by normal modifications to the scarification process, such removal shall be paid for according to Article 109.04. Any removal required or made below the specified depth for scarification of the bridge deck, which does not result in full depth patching, shall be filled with the overlay material at the time of the overlay placement.

(3) Final Surface Preparation. Final surface preparation shall consist of the operation of mechanical blast cleaning equipment to remove any weak concrete at the surface, including the microfractured concrete surface layer remaining as a result of mechanical scarification. Any areas determined by the Engineer to be inaccessible to mechanical equipment shall be thoroughly blast cleaned with hand-held equipment. When hydro-scarification equipment is used for concrete removal, the deck surface need not be blast cleaned with mechanical equipment unless the spoils from the scarification operation are allowed to dry and re-solidify on the deck surface.

Final surface preparation shall also include the cleaning of all dust, debris, and concrete fines from the deck surface including vertical faces of curbs, previously placed adjacent overlays, barrier walls up to a height of 25 mm (1 in.) above the overlay, depressions, and beneath reinforcement bars. Hand-held high-pressure waterblasting equipment shall be used for this operation.

If mechanical scarification is used to produce the final deck surface texture, surface pull-off testing will be required. After the final surface preparation has been completed and before placement of the overlay, the prepared deck surface will be tested by the Engineer according to the Illinois Test Procedure 304 "Pull-off Test (Surface Method)". The Contractor shall provide the test equipment.

a. Start-up Testing. Prior to the first overlay placement, the Engineer will evaluate the blast cleaning method. The start-up area shall be a minimum of 56 sq m (600 sq ft). After the area has been prepared, six random test locations will be determined by the Engineer, and tested according to the Illinois Test Procedure 304 "Pull-off Test (Surface Method)".

   The average of the six tests shall be a minimum of 1,207 kPa (175 psi) and each individual test shall have a minimum strength of 1,103 kPa (160 psi). If the criteria are not met, the Contractor shall adjust the blast cleaning method. Start-up testing will be repeated until satisfactory results are attained.

   Once an acceptable surface preparation method is established, it shall be continued for the balance of the work. The Contractor may, with the permission of the Engineer, change the surface preparation method, in which case, additional start-up testing will be required.

b. Lot Testing. After start-up testing has been completed, the following testing frequency will be used. For each structure, each stage will be divided into lots of not more than 420 sq m (4500 sq ft). Three random test locations will be determined by the Engineer for each lot, and tested according to the Illinois Test Procedure 304 "Pull-off Test (Surface Method)".

   The average of the three tests shall be a minimum of 1,207 kPa (175 psi) and each individual test shall have a minimum strength of 1,103 kPa (160 psi). In the case of a failing individual test or a failing average of three tests, the Engineer

will determine the area that requires additional surface preparation by the Contractor. Additional test locations will be determined by the Engineer.

In addition to start-up and lot testing, the Department may require surface pull-off testing of areas inaccessible to mechanical blast cleaning equipment and blast cleaned with hand-held equipment. The Engineer shall determine each test location, and each individual test shall have a minimum strength of 1,207 kPa (175 psi).

Exposed reinforcement bars shall be free of dirt, detrimental scale, paint, oil, and other foreign substances which may reduce bond with the concrete. A tight non-scaling coating of rust is not considered objectionable. Loose, scaling rust shall be removed by rubbing with burlap, wire brushing, blast cleaning or other methods approved by the Engineer. All loose reinforcement bars, as determined by the Engineer, shall be retied at the Contractor's expense.

All dust, concrete fines, debris, including water, resulting from the surface preparation shall be confined and shall be immediately and thoroughly removed from all areas of accumulation. If concrete placement does not follow immediately after the final cleaning, the area shall be carefully protected with well-anchored white polyethylene sheeting.

(b) Pre-placement Procedure. Prior to placing the overlay, the Engineer will inspect the deck surface. All contaminated areas shall be blast cleaned again at the Contractor's expense.

Before placing the overlay, the finishing machine shall be operated over the full length of bridge segment to be overlaid to check support rails for deflection and confirm the minimum overlay thickness. All necessary adjustments shall be made and another check performed, unless otherwise directed by the Engineer.

(c) Placement Procedure:

(1) Bonding Methods. The Contractor shall prepare the deck prior to overlay placement by one of the following methods unless restricted as specified on the plans:

a. Grout Method. The deck shall be cleaned to the satisfaction of the Engineer and shall be thoroughly wetted and maintained in a dampened condition for at least 12 hours before placement of the grout is started. Any excess water shall be removed by compressed air or by vacuuming prior to grout placement. Water shall not be applied to the deck surface within one hour before or at any time during placement of the grout. Immediately before placing the overlay mixture, the exposed area shall be thoroughly covered with a thin layer of grout. The grout shall be thoroughly scrubbed into the surface. All vertical as well as horizontal surfaces shall receive a thorough, even coating. The rate of grout placement shall be limited so the brushed grout does not dry out before it is covered with the concrete.

Grout that is allowed to become dry and chalky shall be blast cleaned and replaced at the Contractor's expense. No concrete shall be placed over dry grout.

b. Direct Bond Method. The deck shall be cleaned to the satisfaction of the Engineer and shall be thoroughly wetted and maintained in a dampened condition with water for at least 12 hours before placement of the overlay. Any excess water shall be removed by compressed air or by vacuuming prior to the beginning of overlay placement. Water shall not be applied to the deck surface within one hour before or at any time during placement of the overlay.

(2) Overlay Placement. For the overlay pour, fogging equipment shall be in operation unless the evaporation rate is less than 0.5 kg/m^2/hr. (0.1 lb./sq. ft./hr.), and the Engineer gives permission to turn off the equipment. The evaporation rate shall be determined according to the figure in the Portland Cement Association's publication titled "Design and Control of Concrete Mixtures" (refer to the section on plastic shrinkage cracking).

The fogging equipment shall be adjusted to adequately cover the entire width of the pour.

Hand-held fogging equipment shall be allowed only when a vibratory screed is used. The fog mist shall not be used to apply water to a specific location to aid finishing.

Placement of the concrete shall be a continuous operation throughout the pour. The overlay shall be placed as close to its final position as possible and then mechanically consolidated and screeded to final grade. All finishing and texturing shall be according to Article 503.17 except that the use of vibrating screeds will be allowed for pour widths of 3.6 m (12 feet) or less without length restrictions.

Internal vibration will be required along edges, adjacent to bulkheads, and where the overlay thickness exceeds 75 mm (3 in.). Internal vibration along the longitudinal edges of a pour will be required with a minimum of 2 hand-held vibrators, one on each edge of the pour. Hand finishing will be required along the edges of the pour and shall be done from sidewalks, curbs or work bridges.

A construction dam or bulkhead shall be installed in case of a delay of 30 minutes or more in the concrete placement operation. If there is a delay of more than ten minutes during overlay placement, wet burlap shall be used to protect the concrete until operations resume.

Concrete placement operations shall be coordinated to limit the distance between the point of concrete placement and concrete covered with cotton mats for curing. The distance shall not exceed 10.5 m (35 ft). For overlay pour widths greater than 15 m (50 ft), the distance shall not exceed 7.5 m (25 ft).

All construction joints shall be formed. When required by the Engineer the previously placed overlay shall be sawed full-depth to a straight and vertical edge before fresh concrete is placed. The Engineer will determine the extent of the removal. When longitudinal joints are not shown on the plans, the locations shall be subject to approval by the Engineer and shall not be located in the wheel paths.

The Contractor shall stencil the date of construction (month and year) and the letters LX into the overlay before it takes its final set. The stencil shall be located in a conspicuous location, as determined by the Engineer, for each stage of construction. This location shall be outside of the grooving where possible and within 1 m (3 ft) of an abutment joint. The characters shall be 75 mm to 100 mm (3 to 4 in.) in height, 5 mm (1/4 in.) in depth and face the centerline of the roadway.

(3) Limitations of Operations:

(a) Weather Limitations. Concrete shall not be placed unless the deck temperature is above 10°C (50°F) and the air temperature is predicted to be above 10°C (50°F) for at least 12 hours after placement. The concrete shall be maintained at a minimum of 10°C (50°F) during the wet cure period. The temperature of the concrete mixture as placed shall not be less than 10°C (50°F) nor more than 32°C (90°F). If night placement is required, illumination and placement procedures will be subject to the approval of the Engineer. No additional compensation will be allowed if night work is required.

(b) Other Limitations. Mobile concrete mixers, truck mixers, concrete pumps, or other heavy equipment will not be permitted on any portion of the deck where the top reinforcing mat has been exposed. Conveyors, buggy ramps and pump piping shall be installed in a way that will not displace undercut reinforcement bars. Air compressors may be operated on the deck only if located directly over a pier and supported off undercut reinforcement bars. Compressors will not be allowed to travel over undercut reinforcement bars.

Concrete removal may proceed during final cleaning and concrete placement on adjacent portions of the deck, provided the removal does not interfere in any way with the cleaning or placement operations.

If water or contaminants from the hydro-scarification flow into the area of final cleaning or concrete placement, hydro-scarification shall be suspended until the concrete has been placed and has cured a minimum of 24 hours. No concrete shall be removed within 1.8 m (6 ft) of a newly-placed overlay until the concrete has obtained a minimum compressive strength of 20,700 kPa (3000 psi) or flexural strength of 4,150 kPa (600 psi).

(4) Curing.

Curing. The minimum curing time shall be 48 hours of wet cure followed by 48 hours of dry cure. The wet cure shall be according to Article 1020.13(a)(5) Wetted Cotton Mat Method except that the cotton mats may be pre-dampened to minimize adhesion of the cotton mats to the overlay. Excess water shall not be allowed to drip from the cotton mats onto the overlay during placement of the mats. After the wet cure is completed all layers of covering materials shall be removed to allow for the dry cure.

If the ambient temperature falls below 10°C (50°F) during either the wet or dry curing periods, the time below 10°C (50°F) will not be included in the 96 hour curing period. If there is sufficient rain to wet the surface of the overlay for more than one hour of the dry cure period, the wet time will not be included in the 48 hour dry cure period.

(5) Opening to Traffic.

No traffic or construction equipment will be permitted on the overlay until after the specified cure period and the concrete has obtained a minimum compressive strength of 27,500 kPa (4000 psi) or flexural strength of 4,650 kPa (675 psi) unless permitted by the Engineer.

(6) Overlay Testing. The Engineer reserves the right to conduct pull-off tests on the overlay to determine if any areas are not bonded to the underlying concrete, and at a time determined by the Engineer. The overlay will be tested according to the Illinois Test procedure 305 "Pull-off Test (Overlay Method)", and the Contractor shall provide the test equipment. Each individual test shall have a minimum strength of 1,034 kPa (150 psi). Unacceptable test results will require removal and replacement of the overlay at the Contractor's expense, and the locations will be determined by the Engineer. When removing portions of an overlay, the saw cut shall be a minimum depth of 25 mm (1 in.).

If the overlay is to remain in place, all core holes due to testing shall be filled with a rapid set mortar or concrete. Only enough water to permit placement and consolidation by rodding shall be used, and the material shall be struck-off flush with the adjacent material.

For a rapid set mortar mixture, one part packaged rapid set cement shall be combined with two parts fine aggregate, by volume; or a packaged rapid set mortar shall be used. For a rapid set concrete mixture, a packaged rapid set mortar shall be combined with coarse aggregate according to the manufacturer's instructions; or a packaged rapid set concrete shall be used. Mixing of a rapid set mortar or concrete shall be according to the manufacturer's instructions.

Method of Measurement. The areas of mechanical and/or hydro scarification on the bridge deck will be measured for payment in square meters (square yards). No additional payment will be made for multiple passes of the equipment required to achieve the specified scarification depth.

The concrete overlay will be measured for payment in square meters (square yards).

When Bridge Deck Hydro-Scarification is specified, the additional concrete placed with the overlay, required to fill all depressions below the specified thickness will be measured for payment in cubic meters (cubic yards). The volume will be determined by subtracting the theoretical volume of the overlay from the ticketed volume of overlay delivered minus the volume estimated by the Engineer left in the last truck at the end of the overlay placement. The theoretical cubic meter (cubic yard) quantity for the overlay will be determined by multiplying the plan surface area of the overlay times the specified thickness of the overlay.

Basis of Payment. Concrete scarification of the bridge deck using mechanical scarification equipment will be paid for at the contract unit price per square meter (square yard) for CONCRETE BRIDGE DECK SCARIFICATION of the depth specified. Concrete scarification of the bridge deck using hydro-scarification equipment will be paid for at the contract unit price per square meter (square yard) for BRIDGE DECK HYDRO-SCARIFICATION of the depth specified.

Latex concrete overlay will be paid for at the contract unit price per square meter (square yard) for BRIDGE DECK LATEX CONCRETE OVERLAY, of the thickness specified. When hydro-scarification is specified, the additional volume of overlay required to fill all depressions below the specified thickness will be paid for at the Contractor's actual material cost for the latex concrete per cubic meter (cubic yard) plus 15 percent.

When mechanical scarification is specified, additional partial depth patches poured monolithically with the overlay will be paid for at the contract unit price bid per square meter (square yard) for DECK SLAB REPAIR (PARTIAL).

When the Engineer conducts pull-off tests on the overlay and they are acceptable, Contractor expenses incurred due to testing and for filling core holes will be paid according to Article 109.04. Unacceptable pull-off tests will be at the Contractor's expense.

When specified on the plans, the Contractor has the option of choosing the type of overlay. The options will be limited to those specified in the plans and will be paid for at the contract unit price per square meter (square yard) for BRIDGE DECK CONCRETE OVERLAY OPTION, of the thickness specified.

Overlay material placed off the deck in abutment backwalls, and/or other locations will not be measured for payment but will be included in the pay item involved.

TEMPORARY SOIL RETENTION SYSTEM
Effective: December 30, 2002

Description. This work shall consist of designing, furnishing, installing, adjusting for stage construction when required and subsequent removal of the temporary soil retention system according to the dimensions and details shown on the plans and in the approved design submittal.

General. The temporary soil retention system shall be designed by the Contractor as a minimum, to retain the exposed surface area specified in the plans or as directed by the Engineer.

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

Construction. The Contractor shall verify locations of all underground utilities before installing any of the soil retention system components or commencing any excavation. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department. The soil retention system shall be installed according to the Contractor's approved design, or as directed by the Engineer, prior to commencing any related excavation. If unable to install the temporary soil retention system as specified in the approved design, the Contractor shall have the adequacy of the design re-evaluated. Any reevaluation shall be submitted to the Engineer for approval prior to commencing the excavation adjacent to the area in question. The Contractor shall not excavate below the maximum excavation line shown in the approved design without the prior permission of the Engineer. The temporary soil retention system shall remain in place until the Engineer determines it is no longer required.

The temporary soil retention system shall be removed and disposed of by the Contractor when directed by the Engineer. When allowed, the Contractor may elect to cut off a portion of the temporary soil retention system leaving the remainder in place. The remaining temporary soil retention system shall be removed to a depth which will not interfere with the new construction, and as a minimum, to a depth of 300 mm (12 in.) below the finished grade, or as directed by the Engineer. Removed system components shall become the property of the Contractor.

When an obstruction is encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to break up, push aside, or remove the obstruction. An obstruction shall be defined as any object (such as but not limited to, boulders, logs, old foundations etc.) where its presence was not obvious or specifically noted on the plans prior to bidding, that cannot be driven or installed through or around, with normal driving or installation procedures, but requires additional excavation or other procedures to remove or miss the obstruction.

Method of Measurement. The temporary soil retention system furnished and installed according to the Contractor's approved design or as directed by the Engineer will be measured for payment in place, in square meters (square feet). The area measured shall be the vertical exposed surface area envelope of the excavation supported by temporary soil retention system.

Any temporary soil retention system cut off, left in place, or installed beyond those dimensions shown on the contract plans or the approved contractor's design without the written permission of the Engineer, shall not be measured for payment but shall be done at the contractor's own expense.

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

Payment for any excavation, related solely to the installation and removal of the temporary soil retention system and/or its components, shall not be paid for separately but shall be included in the unit bid price for TEMPORARY SOIL RETENTION SYSTEM. Other excavation, performed in conjunction with this work, will not be included in this item but shall be paid for as specified elsewhere in this contract.

Obstruction mitigation shall be paid for according to Article 109.04 of the Standard Specifications.

HIGH PERFORMANCE CONCRETE STRUCTURES
Effective: August 5, 2002
Revised: September 10, 2003

Description. This work shall consist of the construction of a cast-in-place high performance concrete (HPC) structure, according to the applicable portions of Section 503 of the Standard Specifications. The structural members requiring the use of HPC shall be as shown on the plans.

Mix Design. The mix design criteria for the high performance concrete structure shall meet the requirements of Article 1020.04 for Class MS and SI concrete. However, the high performance concrete structure mix design shall be selected from the following table.

Article 1020.05(b) shall apply, except that no reduction in cement content will be allowed.

Mix Design	1*	2*
Cement	264 (445)	264 (445)
Class C Fly Ash	53 (90)	53 (90)
Microsilica Solids	15 (25)	--
HRM**	--	16 (27)
Mortar Factor	0.83 – 0.86	0.83 – 0.86
W/C Ratio	0.38 – 0.44	0.38 – 0.44

Mix Design	3*	4*
Cement	264 (445)	264 (445)
GGBF Slag***	53 (90)	53 (90)
Microsilica Solids	15 (25)	--
HRM	--	16 (27)
Mortar Factor	0.83 – 0.86	0.83 – 0.86
W/C Ratio	0.38 – 0.44	0.38 – 0.44

Mix Design	5*	6*
Cement	323 (545)	323 (545)
Microsilica Solids	15 (25)	--
HRM	--	16 (27)
Mortar Factor	0.83 – 0.86	0.83 – 0.86
W/C Ratio	0.38 – 0.44	0.38 – 0.44

*All weights in kg/m^3 ($lbs./yd.^3$)
**HRM – High Reactivity Metakaolin
***GGBF Slag – Ground Granulated Blast-Furnace Slag

Mixing. The mixing requirements shall be according to Article 1020.11(d), except as follows:

(a) Water-based microsilica slurry:

(1) Truck Mixer:

- Combine simultaneously air entraining admixture, water-reducing admixture and/or retarding admixture, microsilica slurry and 80% of the water with cement, fly ash or ground granulated blast-furnace slag (if used), and aggregates.
- Add remaining water.
- Mix 30-40 revolutions at 12-15 RPM.
- Add high range water-reducing admixture.
- Mix 60-70 revolutions at 12-15 RPM.

(2) Stationary Mixer:

- The microsilica slurry shall be diluted into the water stream or weigh box prior to adding into mixer. Combine simultaneously air entraining admixture, water-reducing admixture and/or retarding admixture, microsilica slurry and 80% of the water with cement, fly ash or ground granulated blast-furnace slag (if used), and aggregates.
- Add remaining water.
- After mixing cycle is completed deposit into truck mixer.
- Add high range water-reducing admixture.
- Mix 60-70 revolutions at 12-15 RPM.

(b) Densified microsilica or high reactivity metakaolin (bulk):

(1) Truck Mixer:

- Same as (a)1 above except the densified microsilica or high reactivity metakaolin shall be added with the cement.

(2) Stationary Mixer:

- Same as (a)2 above except the densified microsilica or high reactivity metakaolin shall be added with the cement.

(c) Densified microsilica (bag):

Bagged microsilica shall be kept dry. No bag or material containing moisture shall be introduced into the concrete mixer.

(1) Truck Mixer:

- Combine air entraining admixture, water–reducing admixture and/or retarding admixture and 80% of the water.
- Add cement, fly ash or ground granulated blast-furnace slag, and aggregates.
- Add remaining water.
- Mix 30-40 revolutions at 12-15 RPM.
- Add microsilica.
- Mix 70-80 revolutions at 12-15 RPM.
- Add high range water-reducing admixture.
- Mix 60-70 revolutions at 12-15 RPM.

(2) Stationary Mixer:

- Combine air entraining admixture, water–reducing admixture and/or retarding admixture and 80% of the water.
- Add cement, fly ash or ground granulated blast-furnace slag, and aggregates.
- Add remaining water.
- After mixing cycle is completed deposit into truck mixer.
- Add microsilica to truck.
- Mix 70-80 revolutions at 12-15 RPM.
- Add high range water-reducing admixture.
- Mix 60-70 revolutions at 12-15 RPM.

(d) Undensified HRM (bag):

Bagged HRM shall be kept dry. No bag or material containing moisture shall be introduced into the concrete mixer.

(1) Truck Mixer:

- Same as (c)1, except the undensified HRM shall be added to the truck.

(2) Stationary Mixer:

- Same as (c)2, except the undensified HRM shall be added to the truck.

Method of Measurement. This work will be measured according to Article 503.21.

Basis of Payment. High performance concrete for cast-in-place structures will be paid for at the contract unit price per cubic meter (cubic yard) for HIGH PERFORMANCE CONCRETE STRUCTURE.

PIPE UNDERDRAINS FOR STRUCTURES
Effective: May 17, 2000
Revised: December 12, 2005

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 meters (feet), 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 meter (foot) for PIPE UNDERDRAINS FOR STRUCTURES of the diameter specified, installed and measured as specified herein. 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.

PROTECTIVE COAT
Effective March 15, 2006

Description. The following shall replace Article 503.19 of the Standard Specifications.

503.19 Protective Coat Application. A protective coat shall be applied to the entire top surface of bridge decks, sidewalks, hubguards, and the top and inside vertical faces of sidewalk parapets, end posts, and wings when the concrete is at least 14 days old. This work shall be performed after saw cut grooving, and before the bridge deck is marked and opened to traffic.

Before the protective coat is applied, the concrete surface shall have at least a 48-hour drying period since the last rain and shall be cleaned to remove all oil, grime, and loose particles which would prevent the mixture from penetrating the concrete. Immediately prior to application of the protective coat, the surface shall be blown with oil-free compressed air.

The protective coat shall consist of two applications of the mixture and each application shall be at a rate of 50 sq yd/gal (11 sq m/L) or less.

The protective coat shall be sprayed on the surface using hand methods or with a mechanical spraying machine which will perform the work in a satisfactory manner. The spray nozzle(s) shall be within 18 in. (450 mm) of the concrete or as directed by the Engineer. The interior of the distributor tank shall be thoroughly cleaned prior to placing the protective coat therein. Unless otherwise directed by the Engineer, the temperature of the concrete and air shall be 40 °F (4.4 °C) or higher at the time of application.

The second application of the protective coat shall be made when, in the opinion of the Engineer, the concrete has regained its dry appearance.

Traffic shall be prohibited from the area until the concrete has regained its dry appearance.

If an application of sand is required by the Engineer for blotter material, it will be paid for according to Article 109.04.

CAUTION: Linseed oil – petroleum spirits mixture has a low flash point and is readily flammable.

At the Contractors option a concrete sealer may be substituted for the boiled linseed oil protective coat. The concrete sealer shall be according to Section 1026, except the sealer shall be one of the products allowed for bridge decks For the concrete sealer, the concrete surface shall be prepared as required for the boiled linseed oil protective coat. The concrete sealer shall be applied per the manufacturer's instructions, and information provided in the approved list..

AGGREGATE SHIPPING TICKETS (BDE)

Effective: January 1, 2006

Add the following to Article 1003.01 of the Standard Specifications:

"(f) Shipping Tickets. Shipping tickets for the material shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Designation of Aggregate Information on Shipping Tickets"."

Add the following to Article 1004.01 of the Standard Specifications:

"(f) Shipping Tickets. Shipping tickets for the material shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Designation of Aggregate Information on Shipping Tickets"."

Add the following to Article 1005.01 of the Supplemental Specifications:

"(d) Shipping Tickets. Shipping tickets for the material shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Designation of Aggregate Information on Shipping Tickets"."

80156

BITUMINOUS BASE COURSE / WIDENING SUPERPAVE (BDE)

Effective: April 1, 2002
Revised: August 1, 2005

Description. This work shall consist of constructing bituminous base course Superpave and bituminous concrete base course widening Superpave according to Sections 355 and 356 respectively, of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures" except as modified herein.

Revise Article 355.02(d) of the Standard Specifications to read:

"(d) RAP Material (Note 3)"

Revise Note 2 of Article 355.02 of the Standard Specifications to read:

"Note 2. Unless otherwise specified on the plans, the bituminous material shall be performance graded (PG) asphalt cement (AC) , PG58-22. When more than 15 percent RAP is used, a softer PG binder may be required as determined by the Engineer. When the pavement has a structural number (D_t) of 3.00 or less, the low temperature grade of the asphalt cement shall be lowered one grade (i.e. PG58-28 replaces PG58-22)."

Add the following to the end Article 355.02 of the Standard Specifications:

"Note 3. RAP shall meet the requirements of the special provision "RAP for Use in Bituminous Concrete Mixtures"."

Revise Article 355.05 of the Standard Specifications to read:

"**355.05 Mixture Design.** The Contractor shall submit mix designs for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have completed the course, "Superpave Mix Design Upgrade". The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below:

AASHTO MP 2	Standard Specification for Superpave Volumetric Mix Design
AASHTO R 30	Standard Practice for Mixture Conditioning of Hot-Mix Asphalt (HMA)
AASHTO PP 28	Standard Practice for Designing Superpave HMA
AASHTO T 209	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
AASHTO T 312	Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor

AASHTO T 308 Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

(a) Job Mix Formula (JMF). The JMF shall be according to the following limits:

Ingredient	Percent by Dry Weight
Aggregate	93.0 to 96.0
Asphalt Cement	4.0 to 7.0
Dust/AC Ratio	1.4

When RAP material is being used, the JMF shall be according to the following limits:

Ingredient	Percent by Dry Weight
Virgin Aggregate(s)	46.0 to 96.0
RAP Material(s) (Note 1)	0 to 50
Mineral Filler (if required)	0 to 5.0
Asphalt Cement	4.0 to 7.0
Dust/AC Ratio	1.4

Note 1. If specified on the plans, the maximum percentage of RAP shall be as specified therein.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

Bituminous concrete binder course Superpave mixture IL-25.0 or IL-19.0 meeting the requirements of the special provision, "Superpave Bituminous Concrete Mixtures" may also be used. The minimum compacted lift thickness specified therein shall apply.

(b) Volumetric Requirements.

Design Compactive Effort	Design Air Voids Target (%)
N_{DES} =50	2.0

(c) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified AASHTO T 283 using 4 in. Marshall bricks. To be considered acceptable by the Engineer as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSR) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSR values less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be

selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Engineer. The method of application shall be according to Article 406.12 of the Standard Specifications."

Revise Article 355.06 of the Standard Specifications to read:

"**355.06 Mixture Production.** The asphalt cement shall be transferred to the asphalt tanks and heated to a temperature of 120 °C (250 °F) to 175 °C (350 °F). If the loading temperature exceeds 175 °C (350 °F), the asphalt shall not be used until it has cooled to 175 °C (350 °F). Wide variations in temperature which affect the amount of asphalt delivered will not be permitted.

When a hot-mix plant conforming to Article 1102.01 is used, the aggregate shall be dried and heated in the revolving dryer to a temperature of 120 °C (250 °F) to 175 °C (350 °F).

The aggregate and bituminous material used in the bituminous aggregate mixture shall be measured separately and accurately by weight or by volume. When the aggregate is in the mixer, the bituminous material shall be added and mixing continued for a minimum of 30 seconds and until a homogeneous mixture is produced in which all particles of the aggregate are coated. The mixing period, size of the batch and the production rate shall be approved by the Engineer.

The ingredients shall be heated and combined in such a manner as to produce a mixture which, when discharged from the mixer, shall be workable and vary not more 10 °C (20 °F) from the temperature set by the Engineer.

When RAP material(s) is used in the bituminous aggregate mixture, the virgin aggregate(s) shall be dried and heated in the dryer to a temperature that will produce the specified resultant mix temperature when combined with the RAP material.

The heated virgin aggregates and mineral filler shall be combined with RAP material in such a manner as to produce a bituminous mixture which when discharged from the mixer shall not vary more than 15 °C (30 °F) from the temperature set by the Engineer. The combined ingredients shall be mixed for a minimum of 35 seconds and until a homogeneous mixture as to composition and temperature is obtained. The total mixing time shall be a minimum of 45 seconds consisting of dry and wet mixing. Variation in wet and dry mixing times may be permitted, depending on the moisture content and amount of salvaged material used. The mix temperature shall not exceed 175 °C (350 °F). Wide variations in the mixture temperature will be cause for rejection of the mix.

(a) Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

(b) Required Tests. Testing shall be conducted to control the production of the bituminous mixture using the test methods identified and performed at a frequency not less than indicated in the following table.

Parameter	Frequency of Tests Non-Class I Mixtures	Test Method
Aggregate Gradation Hot bins for batch and continuous plants. Individual cold-feeds or combined belt-feed for drier-drum plants. (% passing seives: 12.5 mm (1/2 In.), 4.75 mm (No. 4), 75 µm (No. 200))	1 gradation per day of production. The first day of production shall be washed ignition oven test on the mix. Thereafter, the testing shall alternate between dry gradation and washed ignition oven test on the mix. The dry gradation and the washed ignition oven test results shall be plotted on the same control chart.	Illinois Procedure (See Manual of Test Procedures for Materials).
Asphalt Content by ignition oven (Note 1.)	1 per day	Illinois-Modified AASHTO T 308
Air Voids Bulk Specific Gravity of Gyratory Sample Maximum Specific Gravity of Mixture	 1 per day 1 per day	 Illinois-Modified AASHTO T 312 Illinois-Modified AASHTO T 209

Note 1. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine AC content.

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.6, and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resumption of production.

During production, mixture containing an anti-stripping additive will be tested by the Engineer for stripping according to Illinois Modified AASHTO T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

(c) Control Charts/Limits. Control charts/limits shall be according to QC/QA requirements for Non-Class I Mixtures, except air voids and density shall be plotted on the control charts within the following control limits:

Individual Test Control Limits	
Voids	±1.2%
Density[1/]	93.0 – 97.4% of G_{mm}

1/ Except when placed as first lift over unimproved subgrade. When the exception applies, the first lift over unimproved subgrade shall be compacted to an average density of not less than 95 percent nor greater than 102 percent of the target density obtained on the growth curve.

Revise Article 355.08 of the Standard Specifications to read:

"**355.08 Placing.** The bituminous mixture shall be placed with a spreading and finishing machine. The minimum compacted thickness of each lift shall be according to the following table:

Nominal Maximum Aggregate Size of Mixture	Minimum Compacted Lift Thickness
CA 10 - 19 mm (3/4 in.)	57 mm (2 1/4 in.)
CA 6 – 25 mm (1 in.)	76 mm (3 in.)

The maximum compacted thickness of each lift shall be 100 mm (4 in.). If the Contractor elects to substitute an approved vibratory roller for one of the required rollers, the maximum compacted thickness of the each lift, excluding the top lift, may be increased to 150 mm (6 in.) provided the required density is obtained.

The surface of each lift shall be clean and dry before succeeding lifts are placed."

Revise Article 355.13 of the Standard Specifications to read:

"**355.13 Basis of Payment.** This work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS BASE COURSE SUPERPAVE of the thickness specified."

Revise Article 356.02 of the Standard Specifications to read:

"**356.02 Materials.** The materials for the bituminous concrete mixture shall meet the requirements of Article 355.02, be designed according to Article 355.05 and produced according to Article 355.06. Bituminous concrete binder course Superpave mixture IL-25.0 or IL-19.0 meeting the requirements of the special provision, "Superpave Bituminous Concrete Mixtures" may also be used. The minimum compacted lift thickness specified therein shall apply."

Revise the first paragraph of Article 356.06 of the Standard Specifications to read:

"**356.06 Base Course Widening.** The bituminous concrete mixture shall be transported according to Article 406.14."

Revise the second sentence of the fifth paragraph of Article 356.06 of the Standard Specifications to read:

"The minimum compacted thickness of each lift shall be according to the table shown in Article 355.08."

Revise the first paragraph of Article 356.11 of the Standard Specifications to read:

"**356.11 Basis of Payment.** Where the Department requires that bituminous concrete be used, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE BASE COURSE WIDENING SUPERPAVE of the thickness specified."

80065

BITUMINOUS CONCRETE SURFACE COURSE (BDE)

Effective: April 1, 2001
Revised: April 1, 2003

Replace the fourth paragraph of Article 406.23(b) of the Standard Specifications with the following:

"Mixture for cracks, joints, flangeways, leveling binder (machine method), leveling binder (hand method) and binder course in excess of 103 percent of the quantity specified by the Engineer will not be measured for payment.

Surface course mixture in excess of 103 percent of adjusted plan quantity will not be measured for payment. The adjusted plan quantity for surface course mixtures will be calculated as follows:

Adjusted Plan Quantity = C x quantity shown on the plans or as specified by the Engineer.

where C = metric: $C = \frac{G_{mb} \times 24.99}{U}$ English: $C = \frac{G_{mb} \times 46.8}{U}$

and where:

G_{mb} = average bulk specific gravity from approved mix design.
U = Unit weight of surface course shown on the plans in kg/sq m/25 mm (lb/sq yd/in.), used to estimate plan quantity.
24.99 = metric constant.
46.8 = English constant.

If project circumstances warrant a new surface course mix design, the above equations shall be used to calculate the adjusted plan quantity for each mix design using its respective average bulk specific gravity."

80050

BITUMINOUS EQUIPMENT, SPREADING AND FINISHING MACHINE (BDE)

Effective: January 1, 2005

Revise the fourth paragraph of Article 1102.03 of the Standard Specifications to read:

"The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to uniformly place a non-segregated mixture in front of the screed. The distribution system shall have chain curtains, deflector plates, and /or other devices designed and built by the paver manufacturer to prevent segregation during distribution of the mixture from the hopper to the paver screed. The Contractor shall submit a written certification that the devices recommended by the paver manufacturer to prevent segregation have been installed and are operational. Prior to paving, the Contractor, in the presence of the Engineer, shall visually inspect paver parts specifically identified by the manufacturer for excessive wear and the need for replacement. The Contractor shall supply a completed check list to the Engineer noting the condition of the parts. Worn parts shall be replaced. The Engineer may require an additional inspection prior to placement of the surface course or at other times throughout the work."

80142

COARSE AGGREGATE FOR TRENCH BACKFILL, BACKFILL AND BEDDING (BDE)

Effective: April 1, 2001
Revised: November 1, 2003

Revise Article 208.02 of the Standard Specifications to read:

"**208.02 Materials.** Materials shall be according to the following Articles of Section 1000 – Materials:

(a) Fine Aggregate (Note 1) 1003.04
(b) Coarse Aggregate (Note 2) 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first sentence of the second paragraph of subparagraph (b) in Article 208.03 of the Standard Specifications to read:

"Any material meeting the requirements of Articles 1003.04 or 1004.06 which has been excavated from the trenches shall be used for backfilling the trenches."

Add the following to the end of Article 542.02 of the Standard Specifications:

"(bb) Fine Aggregate (Note 1) 1003.04
(cc) Coarse Aggregate (Note 2) 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first and second sentences of the second paragraph of subparagraph (a) of Article 542.04 of the Standard Specifications to read:

"The unstable and unsuitable material shall be removed to a depth determined by the Engineer and for a width of one diameter (or equivalent diameter) of the pipe on each side of the pipe culvert, and replaced with aggregate. Rock shall be removed to an elevation 300 mm (1 ft) lower than the bottom of the pipe or to a depth equal to 40 mm/m (1/2 in./ft) of ultimate fill height over the top of the pipe culvert, whichever is the greater depth, and for a width as specified in (b) below, and replaced with aggregate."

Revise the second paragraph of subparagraph (c) of Article 542.04 of the Standard Specifications to read:

"Well compacted aggregate, at least 100 mm (4 in.) in depth below the pipe culvert, shall be placed the entire width of the trench and for the length of the pipe culvert, except well compacted impervious material shall be used for the outer 1 m (3 ft) at each end of the pipe. When the trench has been widened by the removal and replacement of unstable or unsuitable material, the foundation material shall be placed for a width not less than the above specified widths on each side of the pipe. The aggregate and impervious material shall be approved by the Engineer and shall be compacted to the Engineer's satisfaction by mechanical means."

Revise subparagraph (e) of Article 542.04 of the Standard Specifications to read:

"(e) Backfilling. As soon as the condition of the pipe culvert will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe culvert, except at the outer 1 m (3 ft) at each end of the culvert which shall be backfilled with impervious material. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate and impervious material shall be placed in 200 mm (8 in.) layers, loose measurement. When using PVC, PE, or corrugated metal pipe, the aggregate shall be continued to a height of at least 300 mm (1 ft) above the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means. When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

When using PVC, PE, or corrugated metal pipe a minimum of 300 mm (1 ft) of cover from the top of the pipe to the top of the subgrade will be required.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench shall be backfilled with select material, from excavation or borrow, free from large or frozen lumps, clods or rock, meeting the approval of the Engineer. The material shall be placed in layers not exceeding 200 mm (8 in.) in depth, loose measurement and compacted to 95 percent of the standard laboratory density. Compaction shall be obtained by use of mechanical tampers or with approved vibratory compactors. Before compacting, each layer shall be wetted or dried to bring the moisture content within the limits of 80 to 110 percent of optimum moisture content determined according to AASHTO T 99 (Method C). All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the culvert. The filling of the trench shall be carried on simultaneously on both sides of the pipe.

The Contractor may, at his/her expense, backfill the entire trench with aggregate in lieu of select material. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means.

The backfill material for all trenches and excavations made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk shall be according to Section 208. The trench backfill material shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When the trench has been widened for the removal and replacement of unstable or unsuitable material, the backfilling with aggregate and impervious material, will be required for a width of at least the specified widths on each side of the pipe. The remaining width of each layer may be backfilled with select material. Each 200 mm (8 in.) layer for the entire trench width shall be completed before beginning the placement of the next layer."

Revise subparagraph (b) of Article 542.05 of the Standard Specifications to read:

"(b) Embankment. Embankment extending to an elevation of 300 mm (1 ft) over the top of the pipe shall be constructed according to Article 542.04(f), except the material up to the elevation of the center of the pipe and extending to a width of at least 450 mm (18 in.) on each side of the pipe, exclusive of the outer 1 m (3 ft) at each end of the pipe, shall consist of aggregate. At the outer 1 m (3 ft) at each end of the culvert, impervious material shall be used."

Add the following paragraph after the first paragraph of Article 542.10 of the Standard Specifications:

"Trench backfill will be measured for payment according to Article 208.03."

Add the following paragraph after the third paragraph of Article 542.11 of the Standard Specifications:

"Trench backfill will be paid for according to Article 208.04."

Add the following to of Article 550.02 of the Standard Specifications:

"(m) Fine Aggregate (Note 2) 1003.04
(n) Coarse Aggregate (Note 3) 1004.06

Note 2. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 3. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first two sentences of the third paragraph of Article 550.04 of the Standard Specifications to read:

"Well compacted, aggregate bedding material at least 100 mm (4 in.) in depth below the pipe, shall be placed for the entire width of the trench and length of the pipe. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means."

Revise Article 550.07 of the Standard Specifications to read:

"550.07 Backfilling. As soon as the condition of the pipe will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate backfill material shall be placed in 200 mm (8 in.) layers, loose measurement and compacted to the satisfaction of the Engineer by mechanical means. When using PVC pipe, the aggregate shall be continued to a height of at least 300 mm (12 in.) above the top of the pipe.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench and excavation shall be backfilled to the natural line or finished surface as rapidly as the condition of the sewer will permit. The backfill material shall consist of suitable excavated material from the trench or of trench backfill as herein specified. All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the sewer and shall be compacted to the satisfaction of the Engineer by mechanical means. The filling of the trench shall be carried on simultaneously on both sides of the pipe.

The backfill material for trenches and excavation made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk shall be according to Section 208. The backfill material shall be compacted to 85 percent of standard lab density by mechanical means.

All backfill material up to a height of 300 mm (1 ft) above the pipe shall be deposited in uniform layers not exceeding 200 mm (8 in.) thick, loose measurement. The material in each layer shall be compacted to the satisfaction of the Engineer by mechanical means. The

backfilling above this height shall be done according to Method 1, 2 or 3 as described below, with the following exceptions.

When trench backfill or excavated material meeting the requirements of Section 208 is required above the first 300 mm (1 ft) of the pipe, the layers shall not exceed 200 mm (8 in.). Gradations CA6 or CA10 shall not be used with Method 2 or Method 3.

Method 1. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be compacted to the satisfaction of the Engineer by mechanical means.

Method 2. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be either inundated or deposited in water.

Method 3. The trench shall be backfilled with loose material, and settlement secured by introducing water through holes jetted into the backfill to a point approximately 600 mm (2 ft) above the top of the pipe. The holes shall be spaced as directed by the Engineer but shall be no farther than 2 m (6 ft) apart.

The water shall be injected at a pressure just sufficient to sink the holes at a moderate rate of speed. The pressure shall be such that the water will not cut cavities in the backfill material nor overflow the surface. If water does overflow the surface, it shall be drained into the jetted holes by means of shallow trenches.

Water shall be injected as long as it will be absorbed by the backfill material and until samples taken from test holes in the trench show a satisfactory moisture content. The Contractor shall bore the test holes not more than 15 m (50 ft) apart and at such other locations in the trench designated by the Engineer. As soon as the watersoaking has been completed, all holes shall be filled with soil and compacted by ramming with a tool approved by the Engineer.

Backfill material which has been watersoaked shall be allowed to settle and dry for at least 10 days before any surface course or pavement is constructed on it. The length of time may be altered, if deemed desirable, by the Engineer. Where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk, the provisions of this paragraph shall also apply.

At the end of the settling and drying period, the crusted top of the backfill material shall be scarified and, if necessary, sufficient backfill material added, as specified in Method 1, to complete the backfilling operations.

The method used for backfilling and compacting the backfill material shall be the choice of the Contractor. If the method used does not produce results satisfactory to the Engineer, the Contractor will be required to alter or change the method being used so the resultant backfill will be satisfactory to the Engineer. Should the Contractor be required to alter or change the

method being used, no additional compensation will be allowed for altering or changing the method.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When sheeting and bracing have been used, sufficient bracing shall be left across the trench as the backfilling progresses to hold the sides firmly in place without caving or settlement. This bracing shall be removed as soon as practicable. Any depressions which may develop within the area involved in the construction operation due to settlement of the backfilling material shall be filled in a manner approved by the Engineer.

When the Contractor constructs the trench with sloped or benched sides according to Article 550.04, backfilling for the full width of the excavation shall be as specified, except no additional compensation will be allowed for trench backfill material required outside the vertical limits of the specified trench width.

Whenever excavation is made for installing sewer pipe across earth shoulders or private property, the topsoil disturbed by excavation operations shall be replaced as nearly as possible in its original position, and the whole area involved in the construction operations shall be left in a neat and presentable condition.

When using any PVC pipe, the pipe shall be backfilled with aggregate to 300 mm (1 ft) over the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means.

When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

Deflection Testing for Storm Sewers. All PVC storm sewers will be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted.

For PVC storm sewers with diameters 600 mm (24 in.) or smaller, a mandrel drag shall be used for deflection testing. For PVC storm sewers with diameters over 600 mm (24 in.), deflection measurements other than by a mandrel drag shall be used.

Where the mandrel is used, the mandrel shall be furnished by the Contractor and pulled by hand through the pipeline with a suitable rope or cable connected to each end. Winching or other means of forcing the deflection gauge through the pipeline will not be allowed.

The mandrel shall be of a shape similar to that of a true circle enabling the gauge to pass through a satisfactory pipeline with little or no resistance. The mandrel shall be of a design to prevent it from tipping from side to side and to prevent debris build-up from occurring between the channels of the adjacent fins or legs during operation. Each end of the core of the mandrel shall have fasteners to which the pulling cables can be attached. The mandrel shall have 9,

various sized fins or legs of appropriate dimension for various diameter pipes. Each fin or leg shall have a permanent marking that states its designated pipe size and percent of deflection allowable.

The outside diameter of the mandrel shall be 95 percent of the base inside diameter, where the base inside diameter is:

For all PVC pipe (as defined using ASTM D 3034 methodology):

If the pipe is found to have a deflection greater than specified, that pipe section shall be removed, replaced, and retested."

Revise subparagraph (c) of Article 1003.04 of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradation shall be as follows:

Backfill, bedding and trench backfill for pipe culverts and storm sewers ..... FA 1, FA 2, FA 6, or FA 21
Porous granular embankment and backfill, french drains, and sand backfill for underdrains ..... FA 1, FA 2, or FA20 (Note 1)

Note 1: For FA 1, FA 2, and FA 20 the percent passing the 75 μm (No. 200) sieve shall be 2 ± 2."

Revise the title of Article 1004.06 of the Standard Specifications to read:

"Coarse Aggregate for Blotter, Embankment, Backfill, Trench Backfill, French Drains, and Bedding."

Add the following to the end of subparagraph (c) of Article 1004.06 of the Standard Specifications:

"Backfill, bedding, and trench backfill for pipe culverts and storm sewers ..... CA 6, CA 10, and CA 18"

80051

CONCRETE ADMIXTURES (BDE)

Effective: January 1, 2003
Revised: July 1, 2004

Revise Article 1020.05(b) of the Standard Specifications to read:

"(b) Admixtures. Except as specified, the use of admixtures to increase the workability or to accelerate the hardening of the concrete will be permitted only when approved in writing by the Engineer. The Department will maintain an Approved List of Concrete Admixtures. When the Department permits the use of a calcium chloride accelerator, it shall be according to Article 442.02, Note 5.

When the atmosphere or concrete temperature is 18 °C (65 °F) or higher, a retarding admixture meeting the requirements of Article 1021.03 shall be used in the Class BD Concrete and portland cement concrete bridge deck overlays. The amount of retarding admixture to be used will be determined by the Engineer. The proportions of the ingredients of the concrete shall be the same as without the retarding admixture except that the amount of mixing water shall be reduced, as may be necessary, in order to maintain the consistency of the concrete as required. In addition, a high range water-reducing admixture shall be used in Class BD Concrete. The amount of high range water-reducing admixture will be determined by the Engineer. At the option of the Contractor, a water-reducing admixture may be used. Type I cement shall be used.

For Class PC and PS Concrete, a retarding admixture may be added to the concrete mixture when the concrete temperature is 18 °C (65 °F) or higher. Other admixtures may be used when approved by the Engineer, or if specified by the contract. If an accelerating admixture is permitted by the Engineer, it shall be the non-chloride type.

At the Contractor's option, admixtures in addition to an air-entraining admixture may be used for Class PP-1 concrete. The accelerator shall be the non-chloride type. If a water-reducing or retarding admixture is used, the cement factor may be reduced a maximum 18 kg/cu m (0.30 hundredweight/cu yd). If a high range water-reducing admixture is used, the cement factor may be reduced a maximum 36 kg/cu m (0.60 hundredweight/cu yd). Cement factor reductions shall not be cumulative when using multiple admixtures. An accelerator shall always be added prior to a high range water-reducing admixture, if both are used.

If Class C fly ash or ground granulated blast-furnace slag is used in Class PP-1 concrete, a water-reducing or high range water-reducing admixture shall be used. However, the cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used. In addition, an accelerator shall not be used.

For Class PP-2 or PP-3 concrete, a non-chloride accelerator followed by a high range water-reducing admixture shall be used, in addition to the air-entraining admixture. For Class PP-3 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-2 or PP-3 concrete, the Contractor has the option to use a water-reducing admixture. A retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

When the air temperature is less than 13 °C (55 °F) for Class PP-1 or PP-2 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-4 concrete, a high range water-reducing admixture shall be used in addition to the air-entraining admixture. The Contractor has the option to use a water-reducing admixture. An accelerator shall not be used. For stationary or truck mixed concrete, a retarding admixture shall be used to allow for haul time. The Contractor has the option to use a mobile portland cement concrete plant according to Article 1103.04, but a retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

If the Department specifies a calcium chloride accelerator for Class PP-1 concrete, the maximum chloride dosage shall be 1.0 L (1.0 quart) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.0 L (2.0 quarts) per 45 kg (100 lb) of cement if approved by the Engineer. If the Department specifies a calcium chloride accelerator for Class PP-2 concrete, the maximum chloride dosage shall be 1.3 L (1.3 quarts) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.6 L (2.6 quarts) per 45 kg (100 lb) of cement if approved by the Engineer.

For Class PV, MS, SI, RR, SC and SH concrete, at the option of the Contractor, or when specified by the Engineer, a water-reducing admixture or a retarding admixture may be used. The amount of water-reducing admixture or retarding admixture permitted will be determined by the Engineer. The air-entraining admixture and other admixtures shall be added to the concrete separately, and shall be permitted to intermingle only after they have separately entered the concrete batch. The sequence, method and equipment for adding the admixtures shall be approved by the Engineer. The water-reducing admixture shall not delay the initial set of the concrete by more than one hour. Type I cement shall be used.

When a water-reducing admixture is added, a cement factor reduction of up to 18 kg/cu m (0.30 hundredweight/cu yd), from the concrete designed for a specific slump without the admixture, will be permitted for Class PV, MS, SI, RR, SC and SH concrete. When an approved high range water-reducing admixture is used, a cement factor reduction of up to 36 kg/cu m (0.60 hundredweight/cu yd), from a specific water cement/ratio without the admixture, will be permitted based on a 14 percent minimum water reduction. This is applicable to Class PV, MS, SI, RR, SC and SH concrete. A cement factor below 320 kg/cu m (5.35 hundredweight/cu yd) will not be permitted for Class PV, MS, SI, RR, SC and SH concrete. A cement factor reduction will not be

allowed for concrete placed underwater. Cement factor reductions shall not be cumulative when using multiple admixtures.

For use of admixtures to control concrete temperature, refer to Articles 1020.14(a) and 1020.14(b).

The maximum slumps given in Table 1 may be increased to 175 mm (7 in.) when a high range water-reducing admixture is used for all classes of concrete except Class PV and PP."

Revise Section 1021 of the Standard Specifications to read:

"SECTION 1021. CONCRETE ADMIXTURES

1021.01 General. Admixtures shall be furnished in liquid form ready for use. The admixtures may be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer and trade name of the material. Containers shall be readily identifiable to the satisfaction of the Engineer as to manufacturer and trade name of the material they contain.

Prior to inclusion of a product on the Department's Approved List of Concrete Admixtures, the manufacturer shall submit a report prepared by an independent laboratory accredited by the AASHTO Accreditation Program. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications.

Tests shall be conducted using materials and methods specified on a "test" concrete and a "reference" concrete, together with a certification that no changes have been made in the formulation of the material since the performance of the tests. Per the manufacturer's option, the cement content for all required tests shall either be according to applicable specifications or 335 kg/cu m (5.65 cwt/cu yd). Compressive strength test results for six months and one year will not be required.

In addition to the report, the manufacturer shall submit AASHTO T 197 water content and set time test results on the standard cement used by the Department. The test and reference concrete mixture shall contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). The manufacturer may select their lab or an independent lab to perform this testing. The laboratory is not required to be accredited by the AASHTO Accreditation Program.

Prior to the approval of an admixture, the Engineer may conduct all or part of the applicable tests on a sample that is representative of the material to be furnished. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). For freeze-thaw testing, the Department will perform the test according to Illinois Modified AASHTO T 161, Procedure B.

The manufacturer shall include in the submittal the following information according to ASTM C 494; the average and manufacturing range of specific gravity, the average and manufacturing range of solids in the solution, and the average and manufacturing range of pH. The submittal shall also include an infrared spectrophotometer trace no more than five years old.

When test results are more than seven years old, the manufacturer shall re-submit the infrared spectrophotometer trace and the report prepared by an independent laboratory accredited by the AASHTO Accreditation Program.

All admixtures, except chloride-based accelerators, shall contain no more than 0.3 percent chloride by mass (weight).

1021.02 Air-Entraining Admixtures. Air-entraining admixtures shall conform to the requirements of AASHTO M 154.

If the manufacturer certifies that the air-entraining admixture is an aqueous solution of Vinsol resin that has been neutralized with sodium hydroxide (caustic soda), testing for compliance with the requirements may be waived by the Engineer. In the certification, the manufacturer shall show complete information with respect to the formulation of the solution, including the number of parts of Vinsol resin to each part of sodium hydroxide. Before the approval of its use is granted, the Engineer will test the solution for its air-entraining quality in comparison with a solution prepared and kept for that purpose.

1021.03 Retarding and Water-Reducing Admixtures. The admixture shall comply with the following requirements:

(a) The retarding admixture shall comply with the requirements of AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).

(b) The water-reducing admixture shall comply with the requirements of AASHTO M 194, Type A.

(c) The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).

When a Type F or Type G high range water-reducing admixture is used, water-cement ratios shall be a minimum of 0.32.

Type F or Type G admixtures may be used, subject to the following restrictions:

For Class MS, SI, RR, SC and SH concrete, the water-cement ratio shall be a maximum of 0.44.

The Type F or Type G admixture shall be added at the jobsite unless otherwise directed by the Engineer. The initial slump shall be a minimum of 40 mm (1 1/2 in.)

prior to addition of the Type F or Type G admixture, except as approved by the Engineer.

When a Type F or Type G admixture is used, retempering with water or with a Type G admixture will not be allowed. An additional dosage of a Type F admixture, not to exceed 40 percent of the original dosage, may be used to retemper concrete once, provided set time is not unduly affected. A second retempering with a Type F admixture may be used for all classes of concrete except Class PP and SC, provided that the dosage does not exceed the dosage used for the first retempering, and provided that the set time is not unduly affected. No further retempering will be allowed.

Air tests shall be performed after the addition of the Type F or Type G admixture.

1021.04 Set Accelerating Admixtures. The admixture shall comply with the requirements of AASHTO M 194, Type C (accelerating) or Type E (water reducing and accelerating)"

80094

CURING AND PROTECTION OF CONCRETE CONSTRUCTION (BDE)

Effective: January 1, 2004
Revised: November 1, 2005

Revise the second and third sentences of the eleventh paragraph of Article 503.06 of the Standard Specifications to read:

"Forms on substructure units shall remain in place at least 24 hours. The method of form removal shall not result in damage to the concrete."

Delete the twentieth paragraph of Article 503.22 of the Standard Specifications.

Revise the "Unit Price Adjustments" table of Article 503.22 of the Standard Specifications to read:

"UNIT PRICE ADJUSTMENTS	
Type of Construction	Percent Adjustment in Unit Price
For concrete in substructures, culverts (having a waterway opening of more than 1 sq m (10 sq ft)), pump houses, and retaining walls (except concrete pilings, footings and foundation seals):	
When protected by:	
Protection Method II	115%
Protection Method I	110%
For concrete in superstructures:	
When protected by:	
Protection Method II	123%
Protection Method I	115%
For concrete in footings:	
When protected by:	
Protection Method I, II or III	107%
For concrete in slope walls:	
When protected by:	
Protection Method I	107%"

Delete the fourth paragraph of Article 504.05(a) of the Standard Specifications.

Revise the second and third sentences of the fifth paragraph of Article 504.05(a) of the Standard Specifications to read:

"All test specimens shall be cured with the units according to Article 1020.13."

Revise the first paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"Curing and Low Air Temperature Protection. The curing and protection for precast, prestressed concrete members shall be according to Article 1020.13 and this Article."

Revise the first sentence of the second paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"For curing, air vents shall be in place and shall be so arranged that no water can enter the void tubes during the curing of the members."

Revise the first sentence of the third paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"As soon as each member is finished, the concrete shall be covered with curing material according to Article 1020.13."

Revise the eighth paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"The prestressing force shall not be transferred to any member before the concrete has attained the compressive strength of 28,000 kPa (4000 psi) or other higher compressive release strength specified on the plans, as determined from tests of 150 mm (6 in.) by 300 mm (12 in.) cylinders cured with the member according to Article 1020.13. Members shall not be shipped until 28-day strengths have been attained and members have a yard age of at least 4 days."

Delete the third paragraph of Article 512.03(a) of the Standard Specifications.

Delete the last sentence of the second paragraph of Article 512.04(d) of the Standard Specifications.

Revise the "Index Table of Curing and Protection of Concrete Construction" table of Article 1020.13 of the Standard Specifications to read:

"INDEX TABLE OF CURING AND PROTECTION OF CONCRETE CONSTRUCTION			
TYPE OF CONSTRUCTION	CURING METHODS	CURING PERIOD DAYS	LOW AIR TEMPERATURE PROTECTION METHODS
Cast-in-Place Concrete: [11/]			
Pavement Shoulder	1020.13(a)(1)(2)(3)(4)(5) [3/ 5/]	3	1020.13(c)
Base Course Base Course Widening	1020.13(a)(1)(2)(3)(4)(5) [1/ 2/]	3	1020.13(c)
Driveway Median Curb Gutter Curb and Gutter Sidewalk Slope Wall	1020.13(a)(1)(2)(3)(4)(5) [4/ 5/]	3	1020.13(c) [16/]
Paved Ditch Catch Basin Manhole Inlet Valve Vault	1020.13(a)(1)(2)(3)(4)(5) [4/]	3	1020.13(c)
Pavement Patching	1020.13(a)(1)(2)(3)(4)(5) [2/]	3 [12/]	1020.13(c)
Pavement Replacement	1020.13(a)(1)(2)(3)(4)(5) [1/ 2/]	3	442.06(h) and 1020.13(c)
Railroad Crossing	1020.13(a)(3)(5)	1	1020.13(c)
Piles	1020.13(a)(3)(5)	7	1020.13(e)(1)(2)(3)
Footings Foundation Seals	1020.13(a)(1)(2)(3)(4)(5) [4/ 6/]	7	1020.13(e)(1)(2)(3)
Substructure	1020.13(a)(1)(2)(3)(4)(5) [1/ 7/]	7	1020.13(e)(1)(2)(3)
Superstructure (except deck)	1020.13(a)(1)(2)(3)(5) [8/]	7	1020.13(e)(1)(2)
Deck	1020.13(a)(5)	7	1020.13(e)(1)(2) [17/]
Retaining Walls	1020.13(a)(1)(2)(3)(4)(5) [1/ 7/]	7	1020.13(e)(1)(2)
Pump Houses	1020.13(a)(1)(2)(3)(4)(5) [1/]	7	1020.13(e)(1)(2)
Culverts	1020.13(a)(1)(2)(3)(4)(5) [4/ 6/]	7	1020.13(e)(1)(2) [18/]
Other Incidental Concrete	1020.13(a)(1)(2)(3)(5)	3	1020.13(c)
Precast Concrete: [11/]			
Bridge Beams Piles Bridge Slabs Nelson Type Structural Member	1020.13(a)(3)(5) [9/ 10/]	As required. [13/]	504.06(c)(6), 1020.13(e)(2) [19/]
All Other Precast Items	1020.13(a)(3)(4)(5) [2/ 9/ 10/]	As required. [14/]	504.06(c)(6), 1020.13(e)(2) [19/]
Precast, Prestressed Concrete: [11/]			
All Items	1020.13(a)(3)(5) [9/ 10/]	Until strand tensioning is released. [15/]	504.06(c)(6), 1020.13(e)(2) [19/]

Notes-General:

1/ Type I, membrane curing only

2/ Type II, membrane curing only

3/ Type III, membrane curing only

4/ Type I, II and III membrane curing

5/ Membrane curing will not be permitted between November 1 and April 15.

6/ The use of water to inundate footings, foundation seals or the bottom slab of culverts is permissible when approved by the Engineer, provided the water temperature can be maintained at 7 °C (45 °F) or higher.

7/ Asphalt Emulsion for Waterproofing may be used in lieu of other curing methods when specified and permitted according to Article 503.18.

8/ On non-traffic surfaces which receive protective coat according to Article 503.19, a linseed oil emulsion curing compound may be used as a substitute for protective coat and other curing methods. The linseed emulsion curing compound will be permitted between April 16 and October 31 of the same year, provided it is applied with a mechanical sprayer according to Article 1101.09 (b), and meets the material requirements of Article 1022.07.

9/ Steam curing (heat and moisture) is acceptable and shall be accomplished by the method specified in Article 504.06(c)(6).

10/ A moist room according to AASHTO M 201 is acceptable for curing.

11/ If curing is required and interrupted because of form removal for cast-in-place concrete items, precast concrete products, or precast prestressed concrete products, the curing shall be resumed within two hours from the start of the form removal.

12/ Curing maintained only until opening strength is attained, with a maximum curing period of three days.

13/ The curing period shall end when the concrete has attained the mix design strength. The producer has the option to discontinue curing when the concrete has attained 80 percent of the mix design strength or after seven days. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.

14/ The producer shall determine the curing period or may elect to not cure the product. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.

15/ The producer has the option to continue curing after strand release.

16/ When structural steel or structural concrete is in place above slope wall, Article 1020.13(c) shall not apply. The protection method shall be according to Article 1020.13(e)(1).

17/ When Article 1020.13(e)(2) is used to protect the deck, the housing may enclose only the bottom and sides. The top surface shall be protected according to Article 1020.13(e)(1).

18/ For culverts having a waterway opening of 1 sq m (10 sq ft) or less, the culverts may be protected according to Article 1020.13(e)(3).

19/ The seven day protection period in the first paragraph of Article 1020.13(e)(2) shall not apply. The protection period shall end when curing is finished. For the third paragraph of Article 1020.13(e)(2), the decrease in temperature shall be according to Article 504.06(c)(6)."

Add the following to Article 1020.13(a) of the Standard Specifications:

"(5) Wetted Cotton Mat Method. After the surface of concrete has been textured or finished, it shall be covered immediately with dry cotton mats. The cotton mats shall be placed in a manner which will not mar the concrete surface. A texture resulting from the cotton mat material is acceptable. The cotton mats shall then be wetted immediately and thoroughly soaked with a gentle spray of water. For bridge decks, a foot bridge shall be used to place and wet the cotton mats.

The cotton mats shall be maintained in a wetted condition until the concrete has hardened sufficiently to place soaker hoses without marring the concrete surface. The soaker hoses shall be placed on top of the cotton mats at a maximum 1.2 m (4 ft) spacing. The cotton mats shall be kept wet with a continuous supply of water for the remainder of the curing period. Other continuous wetting systems may be used if approved by the Engineer.

After placement of the soaker hoses, the cotton mats shall be covered with white polyethylene sheeting or burlap-polyethylene blankets.

For construction items other than bridge decks, soaker hoses or a continuous wetting system will not be required if the alternative method keeps the cotton mats wet. Periodic wetting of the cotton mats is acceptable.

For areas inaccessible to the cotton mats on bridge decks, curing shall be according to Article 1020.13(a)(3)."

Revise the first paragraph of Article 1020.13(c) of the Standard Specifications to read:

"Protection of Portland Cement Concrete, Other Than Structures, From Low Air Temperatures. When the official National Weather Service forecast for the construction area predicts a low of 0 °C (32 °F), or lower, or if the actual temperature drops to 0 °C (32 °F), or lower, concrete less than 72 hours old shall be provided at least the following protection:"

Delete Article 1020.13(d) and Articles 1020.13(d)(1),(2),(3),(4) of the Standard Specifications.

Revise the first five paragraphs of Article 1020.13(e) of the Standard Specifications to read:

"Protection of Portland Cement Concrete Structures From Low Air Temperatures. When the official National Weather Service Forecast for the construction area predicts a low below 7 °C (45 °F), or if the actual temperature drops below 7 °C (45 °F), concrete less than 72 hours old shall be provided protection. Concrete shall also be provided protection when placed during the winter period of December 1 through March 15. Concrete shall not be placed until the materials, facilities, and equipment for protection are approved by the Engineer.

When directed by the Engineer, the Contractor may be required to place concrete during the winter period. If winter construction is specified, the Contractor shall proceed with the construction, including concrete, excavation, pile driving, steel erection, and all appurtenant work required for the complete construction of the item, except at times when weather conditions make such operations impracticable.

Regardless of the precautions taken, the Contractor shall be responsible for protection of the concrete placed and any concrete damaged by cold temperatures shall be removed and replaced at no additional cost to the Department."

Add the following at the end of the third paragraph of Article 1020.13(e)(1) of the Standard Specifications:

"The Contractor shall provide means for checking the temperature of the surface of the concrete during the protection period."

Revise the second sentence of the first paragraph of Article 1020.13(e)(2) of the Standard Specifications to read:

"The Contractor shall provide means for checking the temperature of the surface of the concrete or air temperature within the housing during the protection period."

Delete the last sentence of the first paragraph of Article 1020.13(e)(3) of the Standard Specifications.

Add the following Article to Section 1022 of the Standard Specifications:

"**1022.06 Cotton Mats.** Cotton mats shall consist of a cotton fill material, minimum 400 g/sq m (11.8 oz/sq yd), covered with unsized cloth or burlap, minimum 200 g/sq m (5.9 oz/sq yd), and be tufted or stitched to maintain stability.

Cotton mats shall be in a condition satisfactory to the Engineer. Any tears or holes in the mats shall be repaired."

Add the following Article to Section 1022 of the Standard Specifications:

"**1022.07 Linseed Oil Emulsion Curing Compound.** Linseed oil emulsion curing compound shall be composed of a blend of boiled linseed oil and high viscosity, heavy bodied linseed oil emulsified in a water solution. The curing compound shall meet the requirements of a Type I according to Article 1022.01, except the drying time requirement will be waived. The oil phase shall be 50 ± 4 percent by volume. The oil phase shall consist of 80 percent by mass (weight) boiled linseed oil and 20 percent by mass (weight) Z-8 viscosity linseed oil. The water phase shall be 50 ± 4 percent by volume."

Revise Article 1020.14 of the Standard Specifications to read:

"**1020.14 Temperature Control for Placement.** Temperature control for concrete placement shall be according to the following.

(a) Temperature Control other than Structures. The temperature of the concrete immediately before placement shall be a minimum of 10 °C (50 °F) and a maximum of 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

Plastic concrete temperatures up to 35 °C (96 °F), as placed, may be permitted provided job site conditions permit placement and finishing without excessive use of water on and/or overworking of the surface. The occurrence within 24 hours of unusual surface distress shall be cause to revert to a maximum 32 °C (90 °F) plastic concrete temperature.

Concrete shall not be placed when the air temperature is below 5 °C (40 °F) and falling or below 2 °C (35 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to between 20 °C (70 °F) and 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

For pavement patching, refer to Article 442.06(e) for additional information on temperature control for placement.

(b) Temperature Control for Structures. The temperature of the concrete, as placed in the forms, shall be a minimum of 10 °C (50 °F) and a maximum of 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits. When insulated forms are used, the temperature of the concrete mixture shall not exceed 25 °C (80 °F). If the Engineer determines that heat of hydration might cause excessive temperatures in the concrete, the concrete shall be placed at a temperature between 10 °C (50 °F) and 15 °C (60 °F). When concrete is placed in contact with previously placed concrete, the temperature of the concrete may be increased as required to offset anticipated heat loss.

Concrete shall not be placed when the air temperature is below 7 °C (45 °F) and falling or below 4 °C (40 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to between 20 °C (70 °F) and 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

(c) Temperature. The concrete temperature shall be determined according to ASTM C 1064."

80114

DETECTABLE WARNINGS (BDE)

Effective: August 1, 2005

Replace Articles 424.08 – 424.12 of the Standard Specifications with the following:

"**424.08 Curb Ramps.** Curb ramps shall be constructed according to the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Illinois Accessibility Code, and as shown on the plans.

Curb ramps shall be constructed to the same thickness as the adjacent sidewalk with a minimum thickness of 100 mm (4 in.).

424.09 Detectable Warnings. Detectable warnings shall consist of a surface of truncated domes meeting the requirements of the ADAAG and the details shown on the plans.

Detectable warnings shall be installed at curb ramps, medians and pedestrian refuge islands, at-grade railroad crossings, transit platform edges, and other locations where pedestrians are required to cross a hazardous vehicular way. Detectable warnings shall also be installed at alleys and commercial entrances when permanent traffic control devices are present. The installation shall be an integral part of the walking surface and only the actual domes shall project above the walking surface.

The product or method used for installing detectable warnings shall come with the following documents which shall be given to the Engineer prior to use.

(a) Manufacturer's certification stating the product is fully compliant with the ADAAG.

(b) Manufacturer's five year warranty.

(c) Manufacturer's specifications stating the required materials, equipment, and installation procedures.

Products that are colored shall be colored their entire thickness.

The materials, equipment, and installation procedures used shall be according to the manufacturer's specifications.

424.10 Backfill. After the concrete has been cured, the spaces along the edges of the sidewalk and ramps shall be backfilled with approved material. The material shall be compacted until firm and the surface neatly graded.

424.11 Disposal of Surplus Material. Surplus or waste material shall be disposed of according to Article 202.03.

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

Detectable warnings will be measured for payment in place and the area computed in square meters (square feet).

Earth excavation will be measured for payment according to Article 202.07.

424.13 Basis of Payment. This work will be paid for at the contract unit price per square meter (square foot) for PORTLAND CEMENT CONCRETE SIDEWALK, of the thickness specified.

Detectable warnings will be paid for at the contract unit price per square meter (square foot) for DETECTABLE WARNINGS.

Earth excavation will be paid for according to Article 202.08."

80146

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION

Effective: September 1, 2000
Revised: June 22, 2005

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% 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% 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 10 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set forth in this Special Provision:

(a) The bidder documents that firmly committed DBE participation has been obtained to meet the goal; or

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

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

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 (7) working days after the date of letting. To meet the seven (7) day requirement, the bidder may send the Plan by certified mail or delivery service within the seven (7) working day period. If a question arises concerning the mailing date of a Plan, the mailing date will be established by the U.S. Postal Service postmark on the original certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service. It is the responsibility of the bidder to ensure that the postmark or receipt date is affixed within the seven (7) working days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Plan is to be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). It is the responsibility of the bidder to obtain confirmation of telefax delivery. The Department will not accept a Utilization Plan if it does not meet the seven (7) day submittal requirement and the bid will be declared 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 (5) working day period in order to cure the deficiency.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments

made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100% goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE firm does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100% goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100% goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE firm does not count toward the DBE goal.

(d) DBE as a trucker: 100% goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contact. Credit will be given for the full value of all such DBE trucks operated using DBE employed drivers. Goal credit will be limited to the value of the reasonable fee or commission received by the DBE if trucks are leased from a non-DBE company.

(e) DBE as a material supplier:

(1) 60% goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100% goal credit for the cost of materials or supplies obtained from a DBE manufacturer.

(3) 100% credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

GOOD FAITH EFFORT PROCEDURES. If the bidder cannot obtain sufficient DBE commitments to meet the contract goal, the bidder must document in the Utilization Plan the good faith efforts made in the attempt to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary

and reasonable steps are those which could reasonably be expected to obtain sufficient DBE participation. The Department will consider the quality, quantity, and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts are not good faith efforts; rather, the bidder is expected to have taken those efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

(a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.

(1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

(2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime Contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a 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 (5) working day period during which the bidder shall take additional efforts. The bidder is not limited by a statement of additional efforts, but may take other action beyond any stated additional efforts in order to obtain additional DBE commitments. The bidder shall submit an amended Utilization Plan if additional DBE commitments to meet the contract goal are secured. If additional DBE commitments sufficient to meet the contract goal are not secured, the bidder shall report the final good faith efforts made in the time allotted. All additional efforts taken by the bidder will be considered as part of the bidder's good faith efforts. If the bidder is not able to meet the goal after taking additional efforts, the Department will make a pre-final determination of the good faith efforts of the bidder and will notify the designated responsible company official of the reasons for an adverse determination.

(c) The bidder may request administrative reconsideration of a pre-final determination adverse to the bidder within the five (5) working days after the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen

Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The pre-final determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issue of whether an adequate good faith effort was made to meet the contract goal. In addition, the request shall be considered a consent by the bidder to extend the time for award. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten (10) working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid 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 (30) calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Report on Department form SBE 2115 to the 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.

ELASTOMERIC BEARINGS (BDE)

Effective: April 1, 2005

Revise Section 1083 of the Standard Specifications to read:

"SECTION 1083. ELASTOMERIC BEARINGS

1083.01 Description. Elastomeric bearings shall consist of steel laminated elastomeric pads or assemblies of steel laminated elastomeric pads with externally bonded structural steel bearing plates, structural steel top bearing plate, and required stainless steel and TFE sheets, as shown on the plans and as specified herein.

Shop drawings of the bearing assemblies shall be submitted to the Engineer. The bearing assemblies shall be furnished as a complete unit from one manufacturing source.

1083.02 Materials. Materials shall be according to the following.

(a) Properties of the Elastomer. The elastomer compound used in the construction of the bearings shall contain only virgin crystallization resistant polychloroprene (neoprene) or virgin natural polyisoprene (natural rubber) as the raw polymer. All materials shall be new with no reclaimed material incorporated in the finished bearing. The elastomer compounds shall be classified as being of low-temperature, Grade 3, as specified by the minimum grade requirements of Table 14.7.5.2-2, "Low Temperature Zones and Minimum Grade of Elastomer", of the AASHTO LRFD Bridge Design Specification. Low temperature zones used in this table are as defined in Figure 14.7.5.2-1, "Temperature Zones", of the same publication.

The cured elastomer shall be according to the following requirements. The properties of the cured elastomeric compound material shall be determined using samples taken from actual bearings.

Material [1/ 2/] Property	ASTM Standard	Test Requirements	Polyisoprene (Natural Rubber)	Polychloroprene (Neoprene)
Physical Properties	D 2240	Hardness	55 ± 5 Shore "A" points	55 ± 5 Shore "A" points
	D 412	Min. Tensile Strength	15,500 kPa (2250 psi)	15,500 kPa (2250 psi)
		Min. Ultimate Elongation	400%	400%
Heat Resistance	D 573 at Specified Temp.	Specified Temperature of Test	70 °C (158 °F)	100 °C (212 °F)
		Aging Time	168 hours	70 hours
		Max. Change in Durometer hardness	+10 Shore "A" points	+15 Shore "A" points
		Max. Change in Tensile Strength	-25%	-15%

		Max. Change in Ultimate Elongation	-25%	-40%
Adhesion [3/] to Steel	Illinois Test Procedure 603	Bond Strength (Peel Test)	7 N/mm (40 lb/in.)	7 N/mm (40 lb/in.)
	D 429, B	Adhesion Failure	R-80%	R-80%

1/ All material tests shall be conducted at 23 ± 2°C (73 ± 4°F) unless otherwise noted.

2/ For the purpose of determining conformance with this specification, an observed or calculated value shall be rounded off to the nearest 100 kPa (10 psi) for tensile strength, to the nearest ten percent of elongation, and to the nearest one percent for change in aged tensile and aged elongation. Hardness and aged hardness shall be rounded off to nearest point according to AASHTO R 11.

3/ The adhesion failure requirement is waived if bond strength equals or exceeds 14 N/mm (80 lb/in.).

(b) TFE Material. The TFE resin shall be 100 percent virgin material, premium grade, meeting the requirements of ASTM D 4894. The TFE sheet (polytetrafluoroethylene sheet, premium grade) shall consist of pure TFE resin, compression molded and skived into sheets of the required thickness. The finished sheet shall conform to the following.

ASTM Standard	Physical Properties	
D 638M (D 638)	Tensile strength min, kPa (psi)	19,300 (2800)
D 638M (D 638)	Elongation, min %	200
D 792	Specific Gravity	2.15-2.20
D 2240	Hardness, Durometer D	50-65
D 621	Deformation Under Load	
	23 °C/690 kPa/24 hrs (73 °F/100 psi/24 hrs), %	2-3
	50 °C/8,300 kPa/24 hrs (122 °F/1200 psi/24 hrs), %	4-8
	23 °C/13,800 kPa/24 hrs (73 °F/2000 psi/24 hrs), %	15 max.
D 570	Water Absorption, %	0.01 max.
	Static Coef. of Friction at 3450 kPa (500 psi) bearing pressure on stainless steel, max	0.07
D 429, B	Adhesion to Steel Peel Strength, N/mm (lb/in.)	4.4 (25)

(c) Stainless Steel Sheets. The stainless steel sheets shall be of the thickness specified and shall conform to ASTM A 240, Type 304. The sliding surface shall have a Type 2B finish or smoother as per the American Society of Metals.

(d) Structural Steel. Structural steel components shall be according to the following.

(1) Structural Steel Bearing Plates. The structural steel bearing plates shall conform to the requirements of AASHTO M 270M Grade 250 (M 270, Grade 36).

(2) Internal Steel Laminates. The internal steel laminates for the laminated elastomeric bearings shall be rolled mild steel sheets conforming to AISI 1015 - 1025, inclusive, ASTM A 1008 (A 1008M) or ASTM A 1011 (A 1011M) for less than 5 mm (3/16 in.) thick sheets, or AASHTO M 270M, Grade 250 (M 270, Grade 36) or ASTM A 283M (A 283) Grade D for 5 mm (3/16 in.) and thicker sheets.

(3) Shear Restrictor Pin. The shear restrictor pin, when required, shall be press fit into the bearing plate and shall be alloy steel, quenched, and tempered to a minimum yield strength 1,450,000 kPa (210,000 psi) or RC hardness of 50 to 55.

(4) Threaded Stud. The threaded stud, nuts and washers, when required, shall conform to the requirements of ASTM A 449 or A 193-B7 and shall be galvanized according to Article 1006.08 of the Standard Specifications.

1083.03 Fabrication Requirements. Bearings with steel laminates shall be cast as a unit in a mold and bonded and vulcanized under heat and pressure. The molds shall have standard shop practice mold finish. The internal steel laminates shall be blast cleaned to a condition matching that of SSPC-Vis 1-01, Pictorial Standard SP6, and additionally cleaned of any oil or grease before bonding. External load plates shall be protected from rusting by the manufacturer, and shall be hot bonded to the bearing during vulcanization. The bond of steel components to and within the elastomeric pads shall be continuous throughout the plan area with no voids or air spaces greater than 2.5 mm (0.10 in.) within the bonding material. Bearings with steel laminates which are designed to act as a single unit with a given shape factor must be manufactured as a single unit. Corners and edges may be rounded with a radius at the corners not exceeding 10 mm (3/8 in.) and a radius at the edges not exceeding 6 mm (1/4 in.).

Bonding of TFE sheets shall be done as noted on the plans. No rubber flash will be permitted on the edges of TFE bearing surfaces. All burrs or raised edges along the perimeter of the TFE surface shall be removed before shipment.

All dimension tolerances shall be according to the following.

Dimensions	Tolerances mm	(in.)
Overall vertical dimensions:		
Design thickness; 32 mm (1 1/4 in.) or less	-0, + 3	(-0, + 1/8)
Design thickness; over 32 mm (1 1/4 in.)	-0, + 6	(-0, + 1/4)
Overall horizontal dimensions:		
For measurements 914 mm (36 in.) and less	-0, + 6	(-0, + 1/4)
For measurements over 914 mm (36 in.)	-0, + 12	(-0, + 1/2)
Thickness of individual layers of elastomer at any point within the bearing:	± 20 % of design value but no more than ± 3 mm (1/8 in.)	
Variation from a plane parallel to the theoretical surface: (as determined by measurements at the edge of the bearings)		
Top	Slope relative to the bottom of no more than 0.005 radians.	
Sides	6	(1/4)
Position of exposed connection members:	± 3	(± 1/8)
Edge cover of embedded steel laminates, restraining devices, holes and slots:	+ 3 min. + 6 max.	(+ 1/8 min.) (+ 1/4 max.)
Size of holes, slots, or inserts:	± 3	(± 1/8)
Position of holes, slots, or inserts:	± 3	(± 1/8)

Structural steel bearing plates shall be fabricated according to Article 505.04 of the Standard Specifications. Prior to shipment of the bearing assemblies, the exposed edges and other exposed portions of the structural steel bearing plates shall be cleaned and painted in accordance with Articles 506.03 and 506.04 of the Standard Specifications. Painting shall be with the zinc-silicate primer according to Article 1008.22 of the Standard Specifications. During the cleaning and painting, the stainless steel and TFE sheet sliding surfaces and the elastomer shall be protected from abrasion and paint.

1083.04 Testing and Acceptance. The rubber laminates shall be of uniform integral units, capable of being separated by mechanical means into separate, well-defined elastomeric layers. The ultimate breakdown limit of the elastomeric bearing under compressive loading shall be not less than 13,800 kPa (2000 psi).

The bearing manufacturer shall load test each completed steel laminated elastomeric bearing pad assembly prior to shipment. The bearings shall be loaded to 10,300 kPa (1500 psi) and under this loading shall exhibit relatively uniform bulging of the rubber layers on all sides and shall show no bond loss or edge splitting. Bearing assemblies under this loading showing nonuniform bulging from one side of the pad to the other, nonuniform bulging along any vertical face of a pad, bulging extending across the specified location of one or more of the internal steel laminates or edge splitting shall be replaced. Nonuniform bulging from one side of the pad to the other may be an indication of lateral misalignment of the internal steel laminates and would not be cause for replacement if probing shows that the edge cover of the steel laminates are within the specified tolerances. Nonuniform bulging along any vertical face of the pad may be

an indication of vertical misalignment of the steel laminates and would not be cause for replacement if measurement of the bases of the nonuniform bulges show that the thickness of the elastomeric layers are within the specified ± 20 percent tolerance. Bulging across the specified location of one or more steel laminates indicates missing steel laminates or lack of bond and pads exhibiting these characteristics shall always be replaced.

The Contractor shall furnish certified copies of the bearing manufacturer's test reports on the physical properties of the component materials for the bearings to be furnished and a certification by the bearing manufacturer that the bearings furnished have been load tested and conform to all requirements.

When directed by the Engineer, the Contractor shall furnish random samples of component materials used in the bearings for testing. In addition, when requested in writing by the Engineer, the Contractor shall furnish an additional project bearing assembly to the Department for testing. When the additional bearing assembly is requested, the Engineer retains the right to select the bearing assembly for testing at random from the project lot. The Contractor will be paid for the additional bearing assembly as specified in Article 503.22 of the Standard Specifications. If the bearing assembly tested is found to be unacceptable, two additional bearing assemblies will be tested. If both are acceptable, the lot will be accepted. If either of the two additional bearing assemblies are unacceptable, the lot will be rejected. The Contractor shall have a new lot produced, including one additional test bearing. No payment will be made for the original failed bearing assembly or any subsequent test assemblies."

80144

EPOXY PAVEMENT MARKING (BDE)

Effective: January 1, 2001
Revised: August 1, 2003

Revise Article 1095.04(b) of the Standard Specifications to read:

"(b) The Epoxide Value (WPE) of Component A shall be tested according to ASTM D 1652 on a pigment free basis. The WPE shall not vary more than plus or minus 50 units of the qualification samples."

Revise Article 1095.04(c) of the Standard Specifications to read:

"(c) The Total Amine Value of Component B shall be tested according to ASTM D 2074. The Total Amine Value shall not vary more than plus or minus 50 units of the qualification samples."

Revise Article 1095.04(g) of the Standard Specifications to read:

"(g) The epoxy pavement marking material, when mixed in the proper mix ratio and applied at 0.35 mm to 0.41 mm (14 to 16 mils) wet film thickness and with the proper saturation of glass spheres, shall exhibit a dry no pick-up time of twenty minutes or less when tested according to ASTM D 711."

Revise Article 1095.04(m) of the Standard Specifications to read:

"(m) The glass beads meet the requirements of Article 1095.07 and the following:

(1) The first drop glass beads shall be tested by the standard visual method of large glass spheres adopted by the Department. The beads shall have a silane coating and meet the following sieve requirements.

Sieve Size	U.S. Standard Sieve Number	% Passing (by weight)
1.70 mm	12	95-100
1.40 mm	14	75-95
1.18 mm	16	10-47
1.00 mm	18	0-7
850 µm	20	0-5

(2) The second drop glass beads shall be Type B."

Revise the second sentence of the first paragraph of Article 1095.04(n) of the Standard Specifications to read:

"Subject the coated panel for 75 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)."

80041

EROSION AND SEDIMENT CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: August 1, 2001
Revised: November 1, 2001

When the Engineer is notified or determines an erosion and/or sediment control deficiency(s) exists, he/she will direct the Contractor in writing to correct the deficiency. The Contractor shall then correct the deficiency within 24 hours. The deficiency may be any lack of repair, maintenance, or implementation of erosion and/or sediment control devices included in the contract, or any failure to comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Site Activities.

If the Contractor fails to correct the deficiency(s) within 24 hours, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The time period will begin with the initial written notification to the Contractor and end with the Engineer's acceptance of the corrected work. The per calendar day deduction will be either $1000.00 or 0.05 percent of the awarded contract value, whichever is greater.

If the Contractor fails to respond, the Engineer may correct the deficiencies and deduct the cost from monies due or which may become due the Contractor. This corrective action shall in no way relieve the Contractor of his/her contractual requirements or responsibilities.

80055

EXPANSION JOINTS (BDE)

Effective: August 1, 2003

Add the following paragraph after the second paragraph of Article 420.10(e) of the Standard Specifications:

"After the dowel bars are oiled, plastic expansion caps shall be secured to the bars maintaining a minimum expansion gap of 50 mm (2 in.) between the end of the bar and the end of the cap. The caps shall fit snuggly on the bar and the closed end shall be watertight. For expansion joints formed using dowel bar basket assemblies, the caps shall be installed on the alternating free ends of the bars. For expansion joints formed using a construction header, the caps shall be installed on the exposed end of each bar once the header has been removed and the joint filler material has been installed."

80103

FLAGGER VESTS (BDE)

Effective: April 1, 2003
Revised: January 1, 2006

Revise the first sentence of Article 701.04(c)(1) of the Standard Specifications to read:

"The flagger shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-2004 for Conspicuity Class 2 garments and approved flagger traffic control signs conforming to Standard 702001 and Article 702.05(e)."

Revise Article 701.04(c)(6) of the Standard Specifications to read:

"(6) Nighttime Flagging. Flaggers shall be illuminated by an overhead light source providing a minimum vertical illuminance of 108 lux (10 fc) measured 300 mm (1 ft) out from the flagger's chest. The bottom of any luminaire shall be a minimum of 3 m (10 ft) above the pavement. Luminaire(s) shall be shielded to minimize glare to approaching traffic and trespass light to adjoining properties.

The flagger vest shall be a fluorescent orange or fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 3 garments."

80101

FREEZE-THAW RATING (BDE)

Effective: November 1, 2002

Revise the first sentence of Article 1004.02(f) of the Standard Specifications to read:

"When coarse aggregate is used to produce portland cement concrete for base course, base course widening, pavement, driveway pavement, sidewalk, shoulders, curb, gutter, combination curb and gutter, median, paved ditch or their repair using concrete, the gradation permitted will be determined from the results of the Department's Freeze-Thaw Test."

80079

FURNISHED EXCAVATION (BDE)

Effective: August 1, 2002
Revised: November 1, 2004

Revise Article 204.01 of the Standard Specifications to read:

"**Description.** Borrow excavation and furnished excavation shall consist of excavating suitable materials obtained from locations approved by the Engineer and transporting the materials to various locations throughout the limits of the contract."

Revise Article 204.07(b) of the Standard Specifications to read:

"(b) Measured Quantities. Furnished excavation will be computed for payment in cubic meters (cubic yards) as follows:

Furnished Excavation = Embankment - [Suitable Excavation x (1 - Shrinkage Factor)]

Where:

Embankment = the volume of fill in its final position computed by the method of average end areas and based upon the existing ground line as shown on the plans except as noted in (1) and (2) below;

Suitable Excavation = earth excavation, rock excavation, and other on-site excavation suitable for use in embankments as shown in the Earthwork Schedule on the plans;

Shrinkage Factor = 0.25 unless otherwise shown on the plans.

(1) If the Contractor so requests, the Engineer will reestablish the existing ground line after the clearing and tree removal have been performed according to Section 201 and the top 150 mm (6 in.) of the existing ground surface has been disked and compacted to the satisfaction of the Engineer.

(2) If settlement platforms are erected, the Engineer will reestablish the existing ground line after the embankment is complete as specified in Article 204.07(a)(2).

Furnished excavation placed in excess of that required for the execution of the contract will not be measured for payment."

Add the following paragraph to the end of Article 204.07 of the Standard Specifications:

"The quantity for furnished excavation will not be recalculated when surplus, suitable materials are utilized in embankments according to Article 202.03."

80072

HAND VIBRATOR (BDE)

Effective: November 1, 2003

Add the following paragraph to Article 1103.17(a) of the Standard Specifications:

"The vibrator shall have a non-metallic head for areas containing epoxy coated reinforcement. The head shall be coated by the manufacturer. The hardness of the non-metallic head shall be less than the epoxy coated reinforcement, resulting in no damage to the epoxy coating. Slip-on covers will not be allowed."

80054

IMPACT ATTENUATORS, TEMPORARY (BDE)

Effective: November 1, 2003
Revised: August 1, 2006

Description. This work shall consist of furnishing, installing, maintaining, and removing temporary impact attenuators of the category and test level specified.

Materials. Materials shall meet the requirements of the impact attenuator manufacturer and the following:

Item	Article/Section
(a) Fine Aggregate (Note 1)	1003.01
(b) Steel Posts, Structural Shapes, and Plates	1006.04
(c) Rail Elements, End Section Plates, and Splice Plates	1006.25
(d) Bolts, Nuts, Washers and Hardware	1006.25
(e) Hollow Structural Tubing	1006.27(b)
(f) Wood Posts and Wood Blockouts	1007.01, 1007.02, 1007.06
(g) Preservative Treatment	1007.12
(h) Rapid Set Mortar (Note 2)	

Note 1. Fine aggregate shall be FA-1 or FA-2, Class A quality. The sand shall be unbagged and shall have a maximum moisture content of five percent.

Note 2. Rapid set mortar shall be obtained from the Department's approved list of Packaged, Dry, Rapid Hardening Cementitous Materials for Concrete Repairs. For a rapid set mortar mixture, one part packaged rapid set cement shall be combined with two parts fine aggregate, by volume or a packaged rapid set mortar shall be used. Mixing of the rapid set mortar shall be according to the manufacturer's instructions.

CONSTRUCTION REQUIREMENTS

General. Impact Attenuators shall meet the testing criteria contained in National Cooperative Highway Research Program (NCHRP) Report 350 for the test level specified and shall be on the Department's approved list.

Installation. Regrading of slopes or approaches for the installation shall be as shown on the plans.

Attenuator bases, when required by the manufacturer, shall be constructed on a prepared subgrade according to the manufacturer's specifications. The surface of the base shall be slightly sloped or crowned to facilitate drainage.

Impact attenuators shall be installed according to the manufacturer's specifications and include all necessary transitions between the impact attenuator and the item to which it is attached.

When water filled attenuators are used between November 1 and April 15, they shall contain anti-freeze according to the manufacturer's recommendations.

Markings. Sand module impact attenuators shall be striped with alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes. There shall be at least two of each stripe on ea ch module.

Other types of impact attenuators shall have a terminal marker applied to their nose and reflectors along th eir sides.

Maintenance. All maintenance of the impact attenuators shall be the responsibility of the Contractor until removal is directed by the Engineer.

Relocate. When relocation of temporary impact attenuators is specified, they shall be removed, relocated and reinstalled at the new location. The reinstallation requirements shall be the same as those for a new instal lation.

Removal. When the Engineer determines the temporary impact attenuators are no longer required, the installation shall be dismantled with all hardware becoming the property of the Contractor.

Surplus material shall be disposed of according to Article 202.03. Anti-freeze, when present, shall be disposed of/recycled according to local ordinances.

When impact attenuators have been anchored to the pavement, the anchor holes shall be repaired with rapid set mortar Only enough water to permit placement and consolidation by rodding shall be used an d the material shall be struck-off flush.

Method of Measurement. This work will be measured for payment as each, where each is defined as one complete installation.

Basis of Payment. This work will be paid for at the contract unit price per each for IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW); IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, WIDE); IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, RESETTABLE); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, NARROW); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, WIDE); or IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) of the test level specified.

Relocation of the devices will be paid for at the contract unit price per each for IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE); IMPACT ATTENUATORS, RELOCATE (SEVERE USE); or IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE); of the test level specified.

Regrading of slopes or approaches will be paid for according to Section 202 and/or Section 204 of the Standard Specific ations.

80110

INLET FILTERS (BDE)

Effective: August 1, 2003

Add the following to Article 280.02 of the Standard Specifications:

"(k) Inlet Filters..... 1081.15(h)"

Add the following paragraph after the first paragraph of Article 280.04(c) of the Standard Specifications:

"When specified, drainage structures shall be protected with inlet filters. Inlet filters shall be installed either directly on the drainage structure or under the grate of the drainage structure resting on the lip of the frame. The fabric bag shall hang down into the drainage structure. Prior to ordering materials, the Contractor shall determine the size and shape of the various drainage structures being protected."

Revise Article 280.07(d) of the Standard Specifications to read:

"(d) Inlet and Pipe Protection. This work will be paid for at the contract unit price per each for INLET AND PIPE PROTECTION.

Protection of drainage structures with inlet filters will be paid for at the contract unit price per each for INLET FILTERS."

Add the following to Article 1081.15 of the Standard Specifications:

"(h) Inlet Filters. An inlet filter shall consist of a steel frame with a two piece geotextile fabric bag attached with a stainless steel band and locking cap that is suspended from the frame. A clean, used bag and a used steel frame in good condition meeting the approval of the Engineer may be substituted for new materials. Materials for the inlet filter assembly shall conform to the following requirements:

(1) Frame Construction. Steel shall conform to Article 1006.04.

Frames designed to fit under a grate shall include an overflow feature that is welded to the frame's ring. The overflow feature shall be designed to allow full flow of water into the structure when the filter bag is full. The dimensions of the frame shall allow the drainage structure grate to fit into the inlet filter assembly frame opening. The assembly frame shall rest on the inside lip of the drainage structure frame for the full variety of existing and proposed drainage structure frames that are present on this contract. The inlet filter assembly frame shall not cause the drainage structure grate to extend higher than 6 mm (1/4 in.) above the drainage structure frame.

(2) Grate Lock. When the inlet is located in a traffic lane, a grate lock shall be used to secure the grate to the frame. The grate lock shall conform to the manufacturer's requirements for materials and installation.

(3) Geotextile Fabric Bag. The sediment bag shall be constructed of an inner filter bag and an outer reinforcement bag.

a. Inner Filter Bag. The inner filter bag shall be constructed of a polypropylene geotextile fabric with a minimum silt and debris capacity of 0.06 cu m (2.0 cu ft). The bag shall conform to the following requirements:

Inner Filter Bag		
Material Property	Test Method	Minimum Avg. Roll Value
Grab Tensile Strength	ASTM D 4632	45 kg (100 lb)
Grab Tensile Elongation	ASTM D 4632	50%
Puncture Strength	ASTM D 4833	29 kg (65 lb)
Trapezoidal Tear	ASTM D 4533	20 kg (45 lb)
UV Resistance	ASTM D 4355	70% at 500 hours
Actual Open Size	ASTM D 1420	212 µm (No. 70 sieve US)
Permittivity	ASTM D 4491	2.0/sec
Water Flow Rate	ASTM D 4491	5900 Lpm/sq m (145 gpm/sq ft)

b. Outer Reinforcement Bag. The outer reinforcement bag shall be constructed of polyester mesh material that conforms to the following requirements:

Outer Reinforcement Bag		
Material Property	Test Method	Value
Content	ASTM D 629	Polyester
Weight	ASTM D 3776	155 g/sq m (4.55 oz/sq yd) ±15%
Whales (holes)	ASTM D 3887	7.5 ± 2 holes/25 mm (1 in.)
Chorses (holes)	ASTM D 3887	15.5 ± 2holes/25 mm (1 in.)
Instronball Burst	ASTM D 3887	830 kPa (120 psi) min.
Thickness	ASTM D 1777	1.0 ± 0.1 mm (0.040 ± 0.005 in.)

(4) Certification. The manufacturer shall furnish a certification with each shipment of inlet filters, stating the amount of product furnished, and that the material complies with these requirements."

80104

ORGANIC ZINC-RICH PAINT SYSTEM (BDE)

Effective: November 1, 2001
Revised: August 1, 2003

Add the following to Section 1008 of the Standard Specifications:

"**1008.26 Organic Zinc-Rich Paint System.** The organic zinc-rich paint system shall consist of an organic zinc-rich primer, an epoxy or urethane intermediate coat, and aliphatic urethane finish coats. It is intended for use over blast-cleaned steel when three-coat shop applications are specified. The system is also suitable for field painting blast-cleaned existing structures.

(a) General Requirements.

(1) Compatibility. Each coating in the system shall be supplied by the same paint manufacturer.

(2) Toxicity. Each coating shall contain less than 0.01 percent lead in the dry film and no more than trace amounts of hexavalent chromium, cadmium, mercury or other toxic heavy metals.

(3) Volatile Organics. The volatile organic compounds of each coating shall not exceed 420 g/L (3.5 lb/gal) as applied.

(b) Test Panel Preparation.

(1) Substrate and Surface Preparation. Test panels shall be AASHTO M 270M, Grade 250 (M 270 Grade 36), hot-rolled steel measuring 100 mm x 150 mm (4 in. x 6 in.). Panels shall be blast-cleaned per SSPC–SP5 white metal condition using metallic abrasive. The abrasive shall be a 60/40 mix of shot and grit. The shot shall be an SAE shot number S230 and the grit an SAE number G40. Hardness of the shot and grit shall be Rockwell C45. The anchor profile shall be 40-65 microns (1.5-2.5 mils) measured according to ASTM D 4417, Method C.

(2) Application and Curing. All coatings shall be spray applied at the manufacturer's recommended film thickness. The coated panels shall be cured at least 14 days at 24 °C ± 1 °C (75 °F ± 2 °F) and 50 ± 5 percent relative humidity.

(3) Scribing. The test panels shall be scribed according to ASTM D 1654 with a single "X" mark centered on the panel. The rectangular dimensions of the scribe shall have a top width of 50 mm (2 in.) and a height of 100 mm (4 in.). The scribe cut shall expose the steel substrate as verified with a microscope.

(4) Number of Panels. All testing shall be performed on triplicate panels.

(c) Zinc-Rich Primer Requirements.

(1) Generic Type. This material shall be an organic zinc-rich epoxy or urethane primer. It shall be suitable for topcoating with epoxies, urethanes, and acrylics.

(2) Zinc Dust. The zinc dust pigment shall comply with ASTM D 520, Type II.

(3) Slip Coefficient. The organic zinc coating shall meet a Class B AASHTO slip coefficient (0.50 or greater) for structural steel joints using ASTM A 325M (A 325) or A 490M (A 490) bolts.

(4) Salt Fog. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 5,000 hours of salt fog exposure when tested according to ASTM B 117 and evaluated according to AASHTO R 31.

(5) Cyclic Exposure. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 5,000 hours of cyclic exposure when tested according to ASTM D 5894 and evaluated according to AASHTO R 31.

(6) Humidity Exposure. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 4,000 hours of humidity exposure when tested according to ASTM D 2247 and evaluated according to AASHTO R 31.

(7) Adhesion. The adhesion to an abrasively blasted steel substrate shall not be less than 6200 kPa (900 psi) when tested according to ASTM D 4541 Annex A4.

(8) Freeze Thaw Stability. There shall be no reduction of adhesion, which exceeds the test precision, after 30 days of freeze/thaw/immersion testing. One 24-hour cycle shall consist of 16 hours of approximately –30 °C (-22 °F) followed by 4 hours of thawing at 50 °C (122 °F) and 4 hours tap water immersion at 25 °C (77 °F). The test panels shall remain in the freezer on weekends and holidays.

(d) Intermediate Coat Requirements.

(1) Generic Type. This material shall be an epoxy or urethane. It shall be suitable as an intermediate coat over inorganic and organic zinc primers and compatible with acrylic, epoxy, and polyurethane topcoats.

(2) Color. The color of the intermediate coat shall be white or off-white.

(e) Urethane Finish Coat Requirements.

(1) Generic Type. This material shall be an aliphatic urethane. It shall be suitable as a topcoat over epoxies and urethanes.

(2) Color and Hiding Power. The finish coat shall match Munsell Glossy Color 7.5G 4/8 Interstate Green, 2.5YR 3/4 Reddish Brown, 10B 3/6 Blue, or 5B 7/1 Gray. The

color difference shall not exceed 3.0 Hunter Delta E Units. Color difference shall be measured by instrumental comparison of the designated Munsell standard to a minimum dry film thickness of 75 microns (3 mils) of sample coating produced on a test panel according to ASTM D 823, Practice E, Hand–Held, Blade Film Application. Color measurements shall be determined on a spectrophotometer with 45 degrees circumferential/zero degrees geometry, illuminant C, and two degrees observer angle. The spectrophotometer shall measure the visible spectrum from 380-720 nanometers with a wavelength interval and spectral bandpass of 10 nanometers.

The contrast ratio of the finish coat at 75 microns (3 mils) dry film thickness shall not be less than 0.99 when tested according to ASTM D 2805.

(3) Weathering Resistance. Test panels shall be aluminum alloy measuring 300 mm x 100 mm (12 in. x 4 in.) prepared according to ASTM D 1730 Type A, Method 1 Solvent Cleaning. A minimum dry film thickness of 75 microns (3 mils) of finish coat shall be applied to three test panels according to ASTM D 823, Practice E, Hand Held Blade Film Application. The coated panels shall be cured at least 14 days at 24 °C ± 1 °C (75 °F ± 2 °F) and 50 ± 5 percent relative humidity. The panels shall be subjected to 300 hours of accelerated weathering using the light and water exposure apparatus (fluorescent UV - condensation type) as specified in ASTM G 53-96 and ASTM G 154 (equipped with UVB-313 lamps). The cycle shall consist of 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. The exposed panels shall not show a color change of more than 3 Hunter Delta E Units.

(f) Three Coat System Requirements.

(1) Finish Coat Color. For testing purposes, the color of the finish coat shall match Federal Standard No 595, color chip 14062 (green).

(2) Salt Fog. When tested according to ASTM B 117 and evaluated according to AASHTO R 31, the paint system shall exhibit no spontaneous delamination and not exceed the following acceptance levels after 5,000 hours of salt fog exposure:

Salt Fog Acceptance Criteria (max)			
Blister Criteria	Rust Criteria		
Size/Frequency	Maximum Creep	Average Creep	% Rusting at Scribed Edges
#8 Few	4mm	1mm	1

(3) Cyclic Exposure. When tested according to ASTM D 5894 and evaluated according to AASHTO R 31, the paint system shall exhibit no spontaneous delamination and not exceed the following acceptance levels after 5,000 hours of cyclic exposure:

Cyclic Exposure Acceptance Criteria (max)			
Blister Criteria	Rust Criteria		
Size/Frequency	Maximum Creep	Average Creep	% Rusting at Scribed Edges
#8 Few	2mm	1mm	1

(4) Humidity Exposure. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 4,000 hours of humidity exposure when tested according to ASTM D 2247 and evaluated according to AASHTO R 31.

(5) Adhesion. The adhesion to an abrasively blasted steel substrate shall not be less than 6200 kPa (900 psi) when tested according to ASTM D 4541 Annex A4.

(6) Freeze Thaw Stability. There shall be no reduction of adhesion, which exceeds the test precision, after 30 days of freeze/thaw/immersion testing. One 24 hour cycle shall consist of 16 hours of approximately –30 °C (-22 °F) followed by 4 hours of thawing at 50 °C (122 °F) and 4 hours tap water immersion at 25 °C (77 °F). The test panels shall remain in the freezer mode on weekends and holidays.

(g) Qualification Samples and Tests. The manufacturer shall supply, to an independent test laboratory and to the Department, samples of the organic zinc-rich primer, epoxy or urethane intermediate coat, and aliphatic urethane finish coats for evaluation. Prior to approval and use, the manufacturer shall submit a notarized certification of the independent laboratory, together with results of all tests, stating that these materials meet the requirements as set forth herein. The certified test report shall state lots tested, manufacturer's name, product names, and dates of manufacture. New certified test results and samples for testing by the Department shall be submitted any time the manufacturing process or paint formulation is changed. All costs of testing, other than tests conducted by the Department, shall be borne by the manufacturer.

(h) Acceptance Samples and Certification. A 1 L (1 qt) sample of each lot of paint produced for use on state or local agency projects shall be submitted to the Department for testing, together with a manufacturer's certification. The certification shall state that the formulation for the lot represented is essentially identical to that used for qualification testing. All acceptance samples shall be witnessed by a representative of the Illinois Department of Transportation. The organic zinc-rich primer, epoxy or urethane intermediate coat, and aliphatic urethane finish coats shall not be used until tests are completed and they have met the requirements as set forth herein."

80069

PARTIAL PAYMENTS (BDE)

Effective: September 1, 2003

Revise Article 109.07 of the Standard Specifications to read:

"**109.07 Partial Payments.** Partial payments will be made as follows:

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

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved. Furthermore, progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

(b) Material Allowances. At the discretion of the Department, payment may be made for materials, prior to their use in the work, when satisfactory evidence is presented by the Contractor. Satisfactory evidence includes justification for the allowance (to expedite the work, meet project schedules, regional or national material shortages, etc.), documentation of material and transportation costs, and evidence that such material is properly stored on the project or at a secure location acceptable and accessible to the Department.

Material allowances will be considered only for nonperishable materials when the cost, including transportation, exceeds $10,000 and such materials are not expected to be utilized within 60 days of the request for the allowance. For contracts valued under $500,000, the minimum $10,000 requirement may be met by combining the principal (material) product of no more than two contract items. An exception to this two item limitation may be considered for any contract regardless of value for items in which material (products) are similar except for type and/or size.

Material allowances shall not exceed the value of the contract items in which used and shall not include the cost of installation or related markups. Amounts paid by the Department for material allowances will be deducted from estimates due the Contractor as the material is used. Two-sided copies of the Contractor's cancelled checks for materials and transportation must be furnished to the Department within 60 days of payment of the allowances or the amounts will be reclaimed by the Department."

80116

PAYMENTS TO SUBCONTRACTORS (BDE)

Effective: June 1, 2000
Revised: January 1, 2006

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts and to set the time for such payments.

State law also addresses the timing of payments to be made to subcontractors and material suppliers. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, requires that when a Contractor receives any payment from the Department, the Contractor shall make corresponding, proportional payments to each subcontractor and material supplier performing work or supplying material within 15 calendar days after receipt of the Department payment. Section 7 of the Act further provides that interest in the amount of two percent per month, in addition to the payment due, shall be paid to any subcontractor or material supplier by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors and material suppliers throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the State Prompt Payment Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

When progress payments are made to the Contractor according to Article 109.07 of the Standard Specifications, the Contractor shall make a corresponding payment to each subcontractor and material supplier in proportion to the work satisfactorily completed by each subcontractor and for the material supplied to perform any work of the contract. The proportionate amount of partial payment due to each subcontractor and material supplier throughout the contracting chain shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors and material suppliers shall be paid by the Contractor within 15 calendar days after the receipt of payment from the Department. The Contractor shall not hold retainage from the subcontractors. These obligations shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers; and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain. Any payment or portion of a payment subject to this provision may only be withheld from the subcontractor or material supplier to whom it is due for reasonable cause.

This Special Provision does not create any rights in favor of any subcontractor or material supplier against the State or authorize any cause of action against the State on account of any payment, nonpayment, delayed payment, or interest claimed by application of the State Prompt Payment Act. The Department will not approve any delay or postponement of the 15 day requirement except for reasonable cause shown after notice and hearing pursuant to Section

7(b) of the State Prompt Payment Act. State law creates other and additional remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond according to the Public Construction Bond Act, 30 ILCS 550.

80022

PAYROLLS AND PAYROLL RECORDS (BDE)

Effective: August 10, 2005

FEDERAL AID CONTRACTS. Add the following State of Illinois requirements to the Federal requirements contained in Section V of Form FHWA-1273:

"The payroll records shall include each worker's name, address, telephone number, social security number, classification, rate of pay, number of hours worked each day, starting and ending times of work each day, total hours worked each week, itemized deductions made, and actual wages paid.

The Contractor and each subcontractor shall submit payroll records to the Engineer each week from the start to the completion of their respective work. The submittals shall be on the Department's form SBE 48, or an approved facsimile. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate box ("No Work", "Suspended", or "Complete") checked on the form."

STATE CONTRACTS. Revise Section IV of Check Sheet #5 of the Recurring Special Provisions to read:

"IV. COMPLIANCE WITH THE PREVAILING WAGE ACT

1. Prevailing Wages. All wages paid by the Contractor and each subcontractor shall be in compliance with The Prevailing Wage Act (820 ILCS 130), as amended, except where a prevailing wage violates a federal law, order, or ruling, the rate conforming to the federal law, order, or ruling shall govern. The Contractor shall be responsible to notify each subcontractor of the wage rates set forth in this contract and any revisions thereto. If the Department of Labor revises the wage rates, the Contractor will not be allowed additional compensation on account of said revisions.

2. Payroll Records. The Contractor and each subcontractor shall make and keep, for a period of three years from the date of completion of this contract, records of the wages paid to his/her workers. The payroll records shall include each worker's name, address, telephone number, social security number, classification, rate of pay, number of hours worked each day, starting and ending times of work each day, total hours worked each week, itemized deductions made, and actual wages paid. Upon two business days' notice, these records shall be available, at all reasonable hours at a location within the State, for inspection by the Department or the Department of Labor.

3. Submission of Payroll Records. The Contractor and each subcontractor shall submit payroll records to the Engineer each week from the start to the completion of their respective work. The submittals shall be on the Department's form SBE 48, or an approved facsimile. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate box ("No Work", "Suspended", or "Complete") checked on the form.

Each submittal shall be accompanied by a statement signed by the Contractor or subcontractor which avers that: (i) such records are true and accurate; (ii) the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required by the Act; and (iii) the Contractor or subcontractor is aware that filing a payroll record that he/she knows to be false is a Class B misdemeanor.

4. Employee Interviews. The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigators of the Department or the Department of Labor."

80155

PERSONAL PROTECTIVE EQUIPMENT (BDE)

Effective: July 1, 2004

All personnel, excluding flaggers, working outside of a vehicle (car or truck) within 7.6 m (25 ft) of pavement open to traffic shall wear a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/.green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments. Other types of garments may be substituted for the vest as long as the garments have manufacturers tags identifying them as meeting the ANSI Class 2 requirement.

80130

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

PORTABLE CHANGEABLE MESSAGE SIGNS (BDE)

Effective: November 1, 1993
Revised: April 2, 2004

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

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

The message panel shall be of either a bulb matrix or disc matrix design controlled by an onboard computer capable of storing a minimum of 99 programmed messages for instant recall. The computer shall be capable of being programmed to accept messages created by the operator via an alpha-numeric keyboard and able to flash any six messages in sequence. The message panel shall also be capable of being controlled by a computer from a remote location via a cellular linkage. The Contractor shall supply the modem, the cellular phone, and the necessary software to run the sign from a remote computer at a location designated by the Engineer. The Contractor shall promptly program and/or reprogram the computer to provide the messages as directed by the Engineer.

The message panel shall be visible from 400 m (1/4 mile) under both day and night conditions. The letters shall be legible from 250 m (750 ft).

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

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

When the sign(s) are displaying messages, they shall be considered a traffic control device. At all times when no message is displayed, they shall be considered equipment.

Basis of Payment. When portable changeable message signs are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard.

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

80124

PORTLAND CEMENT (BDE)

Effective: January 1, 2005
Revised: November 1, 2005

Add the following paragraph after the last paragraph of Article 1001.01 of the Standard Specifications.

"For portland cement according to ASTM C 150, the bill of lading shall state if limestone has been added. The bill of lading shall also state that the limestone addition is not in excess of five percent by mass (weight) of the cement."

80139

PORTLAND CEMENT CONCRETE (BDE)

Effective: November 1, 2002

Add the following paragraph after the fourth paragraph of Article 1103.01(b) of the Standard Specifications:

"The truck mixer shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Add the following paragraph after the first paragraph of Article 1103.01(c) of the Standard Specifications:

"The truck agitator shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Add the following paragraph after the first paragraph of Article 1103.01(d) of the Standard Specifications:

"The nonagitator truck shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Revise the first sentence of the first paragraph of Article 1103.02 of the Standard Specifications to read:

"The plant shall be approved before production begins according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

80083

PRECAST CONCRETE PRODUCTS (BDE)

Effective: July 1, 1999
Revised: November 1, 2004

Product Approval. Precast concrete products shall be produced according to the Department's current Policy Memorandum, "Quality Control/Quality Assurance Program for Precast Concrete Products". The Policy Memorandum applies to precast concrete products listed under the Products Key of the "Approved List of Certified Precast Concrete Producers".

Precast Concrete Box Culverts. Add the following sentence to the end of the fourth paragraph of Article 540.06:

"After installation, the interior and exterior joint gap between precast concrete box culvert sections shall not exceed 38 mm (1 1/2 in.)."

Portland Cement Replacement. For precast concrete products using Class PC concrete or other mixtures, portland cement replacement with fly ash or ground granulated blast-furnace (GGBF) slag shall be governed by the AASHTO or ASTM standard specification referenced in the Standard Specifications.

For all other precast concrete products using Class PC concrete or other mixtures, portland cement replacement with fly ash or GGBF slag shall be approved by the Engineer. Class F fly ash shall not exceed 15 percent by mass (weight) of the total portland cement and Class F fly ash. Class C fly ash shall not exceed 20 percent by mass (weight) of the total portland cement and Class C fly ash. GGBF slag shall not exceed 25 percent by mass (weight) of the total portland cement and GGBF slag.

Concrete mix designs, for precast concrete products, shall not consist of portland cement, fly ash and GGBF slag.

Ready-Mixed Concrete. Delete the last paragraph of Article 1020.11(a) of the Standard Specifications.

Shipping. When a precast concrete product has attained the specified strength, the earliest the product may be loaded, shipped, and used is on the fifth calendar day. The first calendar day shall be the date casting was completed.

Acceptance. Products which have been lot or piece inspected and approved by the Department prior to July 1, 1999, will be accepted for use on this contract.

419.doc

PREFORMED RECYCLED RUBBER JOINT FILLER (BDE)

Effective: November 1, 2002

Revise Article 503.02(c) of the Standard Specifications to read:

"(c) Preformed Expansion Joint Filler.....1051"

Revise Article 637.02(d) of the Standard Specifications to read:

"(d) Preformed Expansion Joint Filler.....1051"

Add the following Article to Section 1051 of the Standard Specifications:

"1051.10 Preformed Recycled Rubber Joint Filler. Preformed recycled rubber joint filler shall consist of ground tire rubber, free of steel and fabric, combined with ground scrap or waste polyethylene. It shall not have a strong hydrocarbon or rancid odor and shall meet the physical property requirements of ASTM D 1752. Water absorption by volume shall not exceed 5.0 percent."

80084

REINFORCEMENT BARS (BDE)

Effective: November 1, 2005
Revised: November 2, 2005

Revise Article 1006.10(a) of the Supplemental 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 706M (A 706), Grade 420 (60) 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 1/	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 4/	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 706M (A 706). The dimensions and clearances of this guided bend test shall be according to ASTM E 190.

d. Spiral Reinforcment. 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 284M (M 284) 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 0.18 to 0.30 mm (7 to 12 mils). When spiral reinforcment is coated after fabrication, the thickness of the epoxy coating shall be 0.18 to 0.50 mm (7 to 20 mils).

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 13 mm (0.5 in.) back and the cut is patched before any visible rusting appears. Flame cutting will not be permitted."

80151

SEEDING AND SODDING (BDE)

Effective: July 1, 2004
Revised: November 1, 2006

Revise the following seeding mixtures shown in Table 1 of Article 250.07 of the Standard Specifications to read:

"Table 1 - SEEDING MIXTURES			
Class – Type		Seeds	kg/hectare (lb/acre)
1A	Salt Tolerant Lawn Mixture 7/	Bluegrass Perennial Ryegrass Audubon Red Fescue Rescue 911 Hard Fescue Fults Salt Grass*	70 (60) 20 (20) 20 (20) 20 (20) 70 (60)
2	Roadside Mixture 7/	Inferno Tall Fescue, Tarheel II Tall Fescue, or Quest Tall Fescue Perennial Ryegrass Creeping Red Fescue Red Top	 110 (100) 55 (50) 50 (40) 10 (10)
2A	Salt Tolerant Roadside Mixture 7/	Inferno Tall Fescue, Tarheel II Tall Fescue, or Quest Tall Fescue Perennial Ryegrass Audubon Red Fescue Rescue 911 Hard Fescue Fults Salt Grass 1/	 70 (60) 20 (20) 20 (30) 20 (30) 70 (60)
3	Slope Mixture 7/	Inferno Tall Fescue, Tarheel II Tall Fescue, or Quest Tall Fescue Perennial Ryegrass Alsike Clover 2/ Birdsfoot Trefoil 2/ Andropogon Scoparius (Little Bluestem) Bouteloua Curtipendula (Side-Oats Grama) Fults Salt Grass 1/ Oats, Spring	 45 (40) 25 (20) 5 (5) 10 (10) 5 (5) 10 (10) 35 (30) 55 (50)"

Revise Note 7 of Article 250.07 of the Standard Specifications to read:

"Note 7. In Districts 1 through 6, the planting times shall be April 1 to June 15 and August 1 to November 1. In Districts 7 through 9, the planting times shall be March 1 to June 1 and August 1 to November 15. Seeding may be performed outside these dates provided the Contractor guarantees a minimum of 75 percent uniform growth over the entire seeded area(s) after one growing season. The guarantee shall be submitted to the Engineer in writing prior to performing the work. After one growing season, areas not sustaining 75 percent uniform growth shall be interseeded or reseeded, as determined by the Engineer, at the Contractor's expense."

Add the following sentence to Article 252.04 of the Standard Specifications:

"Sod shall not be placed during the months of July and August."

Revise the first paragraph of Article 252.08 of the Standard Specifications to read:

"**252.08 Sod Watering.** Within two hours after the sod has been placed, water shall be applied at a rate of 25 L/sq m (5 gal/sq yd). Additional water shall be applied every other day at a rate of 15 L/sq m (3 gal/sq yd) for a total of 15 additional waterings. During periods exceeding 26 °C (80 °F) or subnormal rainfall, the schedule of additional waterings may be altered with the approval of the Engineer."

Revise Article 252.09 of the Standard Specifications to read:

"**252.09 Supplemental Watering.** During periods exceeding 26 °C (80 °F) or subnormal rainfall, supplemental watering may be required after the initial and additional waterings. Supplemental watering shall be performed when directed by the Engineer. Water shall be applied at the rate specified by the Engineer within 24 hours of notice."

Revise the first and third paragraphs of Article 252.12 of the Standard Specifications to read:

"**252.12 Method of Measurement.** Sodding will be measured for payment in place and the area computed in square meters (square yards). To be acceptable for final payment, the sod shall be growing in place for a minimum of 30 days in a live, healthy condition. When directed by the Engineer, any defective or unacceptable sod shall be removed, replaced and watered by the Contractor at his/her own expense."

"Supplemental watering will be measured for payment in units of 1000 L (1000 gal) of water applied on the sodded areas. Waterings performed in addition to those required by Article 252.08 or after the 30 day establishment period will be considered as supplemental watering."

Replace the first paragraph of Article 252.13 of the Standard Specifications with the following:

"**252.13 Basis of Payment.** Sodding will be paid for at the contract unit price per square meter (square yard) for SODDING or SODDING, SALT TOLERANT according to the following schedule.

(a) Initial Payment. Upon placement of sod, 25 percent of the pay item will be paid.

(b) Final Payment. Upon acceptance of sod, the remaining 75 percent of the pay item will be paid."

Revise Article 1081.03(b) of the Standard Specifications to read:

"(b) Salt Tolerant Sod.

Variety	Percent by Weight
Buffalo Grass Buchloe Dactyloides	30%
Inferno Tall Fescue	20%
Audubon Red Fescue	15%
Rescue 911 Hard Fescue	15%
Rugby Kentucky Bluegrass	5%
Fults Pucinnellia Distans	15%"

Revise Table II of Article 1081.04(c)(6) of the Standard Specifications to read:

TABLE II

Variety of Seeds	Hard Seed Percent Maximum	Purity Percent Minimum	Pure, Live Seed Percent Minimum	Weed Percent Maximum	Secondary Noxious Weeds No. per kg (oz) Max. Permitted*	Remarks
Alfalfa	20	92	89	0.50	211 (6)	1/
Brome Grass	-	90	75	0.50	175 (5)	-
Clover, Alsike	15	92	87	0.30	211 (6)	2/
Clover, Crimson	15	92	83	0.50	211 (6)	-
Clover, Ladino	15	92	87	0.30	211 (6)	-
Clover, Red	20	92	87	0.30	211 (6)	-
Clover, White Dutch	30	92	87	0.30	211 (6)	3/
Audubon Red Fescue	0	97	82	0.10	105 (3)	-
Fescue, Creeping Red	-	97	82	1.00	105 (3)	-
Fescue, Inferno Tall	0	98	83	0.10	70 (2)	-
Fescue, Tarheel II Tall	-	97	82	1.00	211 (6)	-
Fescue, Quest Tall	0	98	83	0.10	70 (2)	-
Fults Salt Grass	0	98	85	0.10	70 (2)	-
Kentucky Bluegrass	-	97	80	0.30	247 (7)	5/
Lespedeza, Korean	20	92	84	0.50	211 (6)	3/
Oats	-	92	88	0.50	70 (2)	4/
Orchard Grass	-	90	78	1.50	175 (5)	4/
Redtop	-	90	78	1.80	175 (5)	4/
Ryegrass, Perennial, Annual	-	97	85	0.30	175 (5)	4/
Rye, Grain, Winter	-	92	83	0.50	70 (2)	4/
Rescue 911 Hard Fescue	0	97	82	0.10	105 (3)	-
Timothy	-	92	84	0.50	175 (5)	4/
Vetch, Crown	30	92	67	1.00	211 (6)	3/ & 6/
Vetch, Spring	30	92	88	1.00	70 (2)	4/
Vetch, Winter	15	92	83	1.00	105 (3)	4/
Wheat, hard Red Winter	-	92	89	0.50	70 (2)	4/

SELF-CONSOLIDATING CONCRETE FOR CAST-IN-PLACE CONSTRUCTION (BDE)

Effective: November 1, 2005

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 and SI concrete. Self-consolidating concrete may also be used for drilled shafts.

Materials. Materials shall be according to the following.

(a) Self-Consolidating Admixtures. The self-consolidating admixture system shall consist of either a high range water-reducing admixture only or a high range water-reducing admixture combined with a separate viscosity modifying admixture. The one or two component admixture system shall be capable of producing a concrete that can flow around reinforcement and consolidate under its own weight without additional effort and without segregation.

The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F.

The viscosity modifying admixture will be evaluated according to the test methods and mix design proportions referenced in AASHTO M 194, except the following physical requirements shall be met:

(1) For initial and final set times, the allowable deviation of the test concrete from the reference concrete shall not be more than 1.0 hour earlier or 1.5 hours later.

(2) For compressive and flexural strengths, the test concrete shall be a minimum of 90 percent of the reference concrete at 3, 7, and 28 days.

(3) The length change of the test concrete shall be a maximum 135 percent of the reference concrete. However, if the length change of the reference concrete is less than 0.030 percent, the length change of the test concrete shall be a maximum 0.010 percentage units greater than the reference concrete.

(4) The relative durability factor of the test concrete shall be a minimum 80 percent.

(b) Fine Aggregate. A fine aggregate used alone in the mix design shall not have an expansion greater than 0.30 percent per ASTM C 1260. For a blend of two or more fine aggregates, the resulting blend shall not have an expansion greater than 0.30 percent.

The aggregate blend expansion will be calculated as follows:

Aggregate Blend Expansion = (a/100 x A) + (b/100 x B) + (c/100 x C) + ...etc.

Where: a, b, c, ... = percent of aggregate blend
A, B, C, ... = aggregate expansion according to ASTM C 1260

Mix Design Criteria. Article 1020.04 of the Standard Specifications shall apply except as follows:

(a) The minimum cement factor shall be according to Article 1020.04 of the Standard Specifications or as specified. The maximum cement factor shall be 418 kg/cu m (7.05 cwt/cu yd). 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 11, CA 13, CA 14, CA 16, or a blend of these gradations. CA 11 shall not be used for drilled shafts or when the Engineer approves a horizontal flow distance greater than 9 m (30 ft). The fine aggregate proportion shall be a maximum 50 percent by mass (weight) of the total aggregate used.

(e) The slump flow range shall be ± 50 mm (± 2 in.) of the Contractor target value, and within the overall Department range of 510 mm (20 in.) minimum to 710 mm (28 in.) maximum.

(f) The visual stability index shall be a maximum of 1.

(g) The J-ring value shall be a maximum of 100 mm (4 in.). 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 also 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 1.5 cu m (2 cu yd) 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 25 mm (1.0 in.) 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, 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 design falsework and forms for full hydrostatic head pressure of the concrete. Forms shall be tight to prevent leakage of fluid concrete.

Placing and Consolidating. Concrete placement and consolidations 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 1.5 m (5 ft). If necessary, a tremie shall be used to meet this requirement. The maximum distance of horizontal flow from the point of deposit shall be 9 m (30 ft), unless approved otherwise by the Engineer. For drilled shafts, free fall placement will not be permitted."

Delete the sixth, seventh, eighth and ninth paragraphs of Article 503.07 of the Standard Specifications.

Revise the eleventh paragraph of Article 503.07 of the Standard Specifications to read:

"Concrete shall be placed in continuous layers. When it is necessary by reason of an emergency to place less than a complete horizontal layer in one operation, such layer shall terminate in a vertical bulkhead. In order that the concrete will not be injured and that there shall be no line of separation between the batches, the separate batches shall follow each other closely as recommended by the manufacturer of the self-consolidating concrete admixture(s). In no case shall the interval of time between the placing of successive batches be greater than 20 minutes. Concrete shall be rodded with a piece of lumber or conduit if the material has lost its fluidity prior to placement of additional concrete. Any other method for restoring the fluidity of the concrete shall be approved by the Engineer. If ready-mixed concrete is used, the requirements of Article 1020.11 shall apply. Delivery of mixed concrete shall be regulated so that there will not be an interruption in the placing of concrete in the forms, as recommended by the manufacturer of the self-consolidating concrete admixture(s). In no case shall the interval of time be greater than 20 minutes."

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 40 cu m (50 cu yd) 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 230 cu m (300 cu yd) 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 25 mm (1 in.) 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 25 mm (1 in.) 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: November 1, 2005

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 the following.

(a) Self-Consolidating Admixtures. The self-consolidating admixture system shall consist of either a high range water-reducing admixture only or a high range water-reducing admixture combined with a separate viscosity modifying admixture. The one or two component admixture system shall be capable of producing a concrete that can flow around reinforcement and consolidate under its own weight without additional effort and without segregation.

The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F.

The viscosity modifying admixture will be evaluated according to the test methods and mix design proportions referenced in AASHTO M 194, except the following physical requirements shall be met:

(1) For initial and final set times, the allowable deviation of the test concrete from the reference concrete shall not be more than 1.0 hour earlier or 1.5 hours later.

(2) For compressive and flexural strengths, the test concrete shall be a minimum of 90 percent of the reference concrete at 3, 7 and 28 days.

(3) The length change of the test concrete shall be a maximum 135 percent of the reference concrete. However, if the length change of the reference concrete is less than 0.030 percent, the length change of the test concrete shall be a maximum 0.010 percentage units greater than the reference concrete.

(4) The relative durability factor of the test concrete shall be a minimum 80 percent.

(b) Fine Aggregate. A fine aggregate used alone in the mix design shall not have an expansion greater than 0.30 percent per ASTM C 1260. For a blend of two or more fine aggregates, the resulting blend shall not have an expansion greater than 0.30 percent.

The aggregate blend expansion will be calculated as follows:

Aggregate Blend Expansion = (a/100 x A) + (b/100 x B) + (c/100 x C) + ...etc.

Where: a, b, c, ... = percent of aggregate blend
A, B, C, ... = aggregate expansion according to ASTM C 1260

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 or as specified. The maximum cement factor shall be 418 kg/cu m (7.05 cwt/cu yd).

(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 11, CA 13, CA 14, CA 16, or a blend of these gradations. CA 11 shall not be used when the Engineer approves a horizontal flow distance greater than 9 m (30 ft). The fine aggregate proportion shall be a maximum 50 percent by mass (weight) of the total aggregate used.

(e) The slump flow range shall be ± 50 mm (± 2 in.) of the Contractor target value, and within the overall Department range of 510 mm (20 in.) minimum to 710 mm (28 in.) maximum.

(f) The visual stability index shall be a maximum of 1.

(g) The J-ring value shall be a maximum of 100 mm (4 in.). 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.

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)

Effective: April 2, 2004
Revised: July 1, 2004

Description. At the bidder's option, a steel cost adjustment will be made to provide additional compensation to the Contractor or a credit to the Department for fluctuations in steel prices. The bidder must indicate on the attached form whether or not steel cost adjustments will be part of this contract. This attached form shall be submitted with the bid. Failure to submit the form shall make this contract exempt of steel cost adjustments.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)
Structural Steel
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), frames and grates, and other miscellaneous items will be subject to a steel cost adjustment when the pay item they are used in has a contract value of $10,000 or greater.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

(a) Evidence that increased or decreased steel costs have been passed on to the Contractor.

(b) The dates and quantity of steel, in kg (lb), shipped from the mill to the fabricator.

(c) The quantity of steel, in kg (lb), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$SCA = Q \times D$

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in kg (lb)
D = price factor, in dollars per kg (lb)

$D = CBP_M - CBP_L$

Where: CBP_M = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the

American Metal Market (AMM) for the day the steel is shipped from the mill. The indices will be converted from dollars per ton to dollars per kg (lb).

CBP_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 kg (lb).

The unit masses (weights) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the CBP_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 steel items are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

Attachment

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 305 mm (12 in.), 3.80 mm (0.179 in.) wall thickness)	34 kg/m (23 lb/ft)
Furnishing Metal Pile Shells 305 mm (12 in.), 6.35 mm (0.250 in.) wall thickness)	48 kg/m (32 lb/ft)
Furnishing Metal Pile Shells 356 mm (14 in.), 6.35 mm (0.250 in.) wall thickness)	55 kg/m (37 lb/ft)
Other piling	See plans
Structural Steel	See plans for weights
Reinforcing Steel	See plans for weights
Dowel Bars and Tie Bars	3 kg (6 lb) each
Mesh Reinforcement	310 kg/sq m (63 lb/100 sq ft)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	30 kg/m (20 lb/ft)
Steel Plate Beam Guardrail, Type B w/steel posts	45 kg/m (30 lb/ft)
Steel Plate Beam Guardrail, Types A and B w/wood posts	12 kg/m (8 lb/ft)
Steel Plate Beam Guardrail, Type 2	140 kg (305 lb) each
Steel Plate Beam Guardrail, Type 6	570 kg (1260 lb) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	330 kg (730 lb) each
Traffic Barrier Terminal, Type 1 Special (Flared)	185 kg (410 lb) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	16 kg/m (11 lb/ft)
Light Pole, Tenon Mount and Twin Mount, 9 m – 12 m (30 - 40 ft)	21 kg/m (14 lb/ft)
Light Pole, Tenon Mount and Twin Mount, 13.5 m – 16.5 m (45 - 55 ft)	31 kg/m (21 lb/ft)
Light Pole w/Mast Arm, 9 m – 15.2 m (30 - 50 ft)	19 kg/m (13 lb/ft)
Light Pole w/Mast Arm, 16.5 m – 18 m (55 - 60 ft)	28 kg/m (19 lb/ft)
Light Tower w/Luminaire Mount, 24 m – 33.5 m (80 - 110 ft)	46 kg/m (31 lb/ft)
Light Tower w/Luminaire Mount, 36.5 m – 42.5 m (120 - 140 ft)	97 kg/m (65 lb/ft)
Light Tower w/Luminaire Mount, 45.5 m – 48.5 m (150 - 160 ft)	119 kg/m (80 lb/ft)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	95 kg/m (64 lb/ft)
Steel Railing, Type S-1	58 kg/m (39 lb/ft)
Steel Railing, Type T-1	79 kg/m (53 lb/ft)
Steel Bridge Rail	77 kg/m (52 lb/ft)
Frames and Grates	
Frame	115 kg (250 lb)
Lids and Grates	70 kg (150 lb)

Return With Bid

ILLINOIS DEPARTMENT OF TRANSPORTATION

OPTION FOR STEEL COST ADJUSTMENT

The bidder shall submit this form with his/her bid. Failure to submit the form shall make this contract exempt of steel cost adjustments. After award, this form, when submitted shall become part of the contract.

Contract No.: _____

Company Name: _____

Contractor's Option:

Is your company opting to include this special provision as part of the contract plans?

Yes ☐ No ☐

Signature: _____ **Date:** _____

80127

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: April 2, 2005

To account for the preparatory work and operations necessary for the movement of subcontractor personnel, equipment, supplies, and incidentals to the project site and for all other work or operations that must be performed or costs incurred when beginning work approved for subcontracting in accordance with Article 108.01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be equal to 3 percent of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

This provision shall be incorporated directly or by reference into each subcontract approved by the Department.

80143

SUBGRADE PREPARATION (BDE)

Effective: November 1, 2002

Revise the tenth paragraph of Article 301.03 of the Standard Specifications to read:

"Equipment of such weight, or used in such a way as to cause a rut in the finished subgrade of 13 mm (1/2 in.) or more in depth, shall be removed from the work or the rutting otherwise prevented."

80086

SUPERPAVE BITUMINOUS CONCRETE MIXTURES (BDE)

Effective: January 1, 2000
Revised: April 1, 2004

Description. This work shall consist of designing, producing and constructing Superpave bituminous concrete mixtures using Illinois Modified Strategic Highway Research Program (SHRP) Superpave criteria. This work shall be according to Sections 406 and 407 of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures", except as follows.

Materials.

(a) Fine Aggregate Blend Requirement. The Contractor may be required to provide FA 20 manufactured sand to meet the design requirements. For mixtures with Ndesign ≥ 90, at least 50 percent of the required fine aggregate fraction shall consist of either stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation.

(b) Reclaimed Asphalt Pavement (RAP). If the Contractor is allowed to use more than 15 percent RAP, as specified in the plans, a softer performance-graded binder may be required as determined by the Engineer.

RAP shall meet the requirements of the special provision, "RAP for Use in Bituminous Concrete Mixtures".

RAP will not be permitted in mixtures containing polymer modifiers.

RAP containing steel slag will be permitted for use in top-lift surface mixtures only.

(c) Bituminous Material. The asphalt cement (AC) shall be performance-graded (PG) or polymer modified performance-graded (SBS-PG or SBR-PG) meeting the requirements of Article 1009.05 of the Standard Specifications for the grade specified on the plans.

The following additional guidelines shall be used if a polymer modified asphalt is specified:

(1) The polymer modified asphalt cement shall be shipped, maintained, and stored at the mix plant according to the manufacturer's requirements. Polymer modified asphalt cement shall be placed in an empty tank and shall not be blended with other asphalt cements.

(2) The mixture shall be designed using a mixing temperature of 163 ± 3 °C (325 ± 5 °F) and a gyratory compaction temperature of 152 ± 3 °C (305 ± 5 °F).

(3) Pneumatic-tired rollers will not be allowed unless otherwise specified by the Engineer. A vibratory roller meeting the requirements of Article 406.16 of the

Standard Specifications shall be required in the absence of the pneumatic-tired roller.

Laboratory Equipment.

(a) Superpave Gyratory Compactor. The superpave gyratory compactor (SGC) shall be used for all QC/QA testing.

(b) Ignition Oven. The ignition oven shall be used to determine the AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations.

The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

Mixture Design. The Contractor shall submit mix designs, for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have successfully completed the course, "Superpave Mix Design Upgrade". Articles 406.10 and 406.13 of the Standard Specifications shall not apply. The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below.

AASHTO MP 2	Standard Specification for Superpave Volumetric Mix Design
AASHTO R 30	Standard Practice for Mixture Conditioning of Hot-Mix Asphalt (HMA)
AASHTO PP 28	Standard Practice for Designing Superpave HMA
AASHTO T 209	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
AASHTO T 312	Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
AASHTO T 308	Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

(a) Mixture Composition. The ingredients of the bituminous mixture shall be combined in such proportions as to produce a mixture conforming to the composition limits by weight. The gradation mixture specified on the plans shall produce a mixture falling within the limits specified in Table 1.

TABLE 1. MIXTURE COMPOSITION (% PASSING)[1/]								
Sieve Size	IL-25.0 mm		IL-19.0 mm		IL-12.5 mm[4/]		IL-9.5 mm[4/]	
	min	max	min	max	min	max	min	max
37.5 mm (1 1/2 in.)		100						
25 mm (1 in.)	90	100		100				
19 mm (3/4 in.)		90	82	100		100		
12.5 mm (1/2 in.)	45	75	50	85	90	100		100
9.5 mm (3/8 in.)						89	90	100
4.75 mm (#4)	24	42[2/]	24	50[2/]	28	65	28	65
2.36 mm (#8)	16	31	20	36	28	48[3/]	28	48[3/]
1.18 mm (#16)	10	22	10	25	10	32	10	32
600 µm (#30)								
300 µm (#50)	4	12	4	12	4	15	4	15
150 µm (#100)	3	9	3	9	3	10	3	10
75 µm (#200)	3	6	3	6	4	6	4	6

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 40 percent passing the 4.75 mm (#4) sieve for binder courses with Ndesign ≥ 90.

3/ The mixture composition shall not exceed 40 percent passing the 2.36 mm (#8) sieve for surface courses with Ndesign ≥ 90.

4/ The mixture composition for surface courses shall be according to IL-12.5 mm or IL-9.5 mm, unless otherwise specified by the Engineer.

One of the above gradations shall be used for leveling binder as specified in the plans and according to Article 406.04 of the Standard Specifications.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

(b) Dust/AC Ratio for Superpave. The ratio of material passing the 75 μm (#200) sieve to total asphalt cement shall not exceed 1.0 for mixture design (based on total weight of mixture).

(c) Volumetric Requirements. The target value for the air voids of the hot mix asphalt (HMA) shall be 4.0 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the requirements listed in Table 2.

TABLE 2. VOLUMETRIC REQUIREMENTS

	Voids in the Mineral Aggregate (VMA), % minimum				Voids Filled with Asphalt (VFA), %
Ndesign	IL-25.0	IL-19.0	IL-12.5	IL-9.5	
50	12.0	13.0	14.0	15	65 - 78
70					65 - 75
90					
105					

(d) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified T 283 using 4 in. Marshall bricks. To be considered acceptable by the Department as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSRs) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSRs less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Department. The method of application shall be according to Article 406.12 of the Standard Specifications.

Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

Required Plant Tests. Testing shall be conducted to control the production of the bituminous mixture. The Contractor shall use the test methods identified to perform the following mixture tests at a frequency not less than that indicated in Table 3.

TABLE 3. REQUIRED PLANT TESTS for SUPERPAVE

Parameter		Frequency of Tests	Test Method
Aggregate Gradation Hot bins for batch and continuous plants Individual cold-feeds or combined belt-feed for drier drum plants. (% passing sieves: 12.5 mm (1/2 in.), 4.75 mm (No. 4), 2.36 mm (No. 8), 600 µm (No. 30), 75 µm (No. 200))		1 dry gradation per day of production (either morning or afternoon sample). and 1 washed ignition oven test on the mix per day of production (conduct in afternoon if dry gradation is conducted in the morning or vice versa). NOTE. The order in which the above tests are conducted shall alternate from the previous production day (example: a dry gradation conducted in the morning will be conducted in the afternoon on the next production day and so forth). The dry gradation and washed ignition oven test results shall be plotted on the same control chart.	Illinois Procedure (See Manual of Test Procedures for Materials).
Asphalt Content by Ignition Oven (Note 1.)		1 per half day of production	Illinois Modified AASHTO T 308
Air Voids	Bulk Specific Gravity of Gyratory Sample	1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)	Illinois Modified AASHTO T 312
	Maximum Specific Gravity of Mixture		Illinois Modified AASHTO T 209

Note 1. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.2 and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resuming production.

During production, mixtures containing an anti-stripping additive will be tested by the Department for stripping according to Illinois Modified T 283. If the mixture fails to meet the TSR

criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

Construction Requirements

Lift Thickness.

(a) Binder and Surface Courses. The minimum compacted lift thickness for constructing bituminous concrete binder and surface courses shall be according to Table 4:

TABLE 4 – MINIMUM COMPACTED LIFT THICKNESS	
Mixture	Thickness, mm (in.)
IL-9.5	32 (1 1/4)
IL-12.5	38 (1 1/2)
IL-19.0	57 (2 1/4)
IL-25.0	76 (3)

(b) Leveling Binder. Mixtures used for leveling binder shall be as follows:

TABLE 5 – LEVELING BINDER	
Nominal, Compacted, Leveling Binder Thickness, mm (in.)	Mixture
≤ 32 (1 1/4)	IL-9.5
32 (1 1/4) to 50 (2)	IL 9.5 or IL-12.5

Density requirements shall apply for leveling binder when the nominal, compacted thickness is 32 mm (1 1/4 in.) or greater for IL-9.5 mixtures and 38 mm (1 1/2 in.) or greater for IL-12.5 mixtures.

(c) Full-Depth Pavement. The compacted thickness of the initial lift of binder course shall be 100 mm (4 in.). The compacted thickness of succeeding lifts shall meet the minimums specified in Table 4 but not exceed 100 mm (4 in.).

If a vibratory roller is used for breakdown, the compacted thickness of the binder lifts, excluding the top lift, may be increased to 150 mm (6 in.) provided the required density is obtained.

(d) Bituminous Patching. The minimum compacted lift thickness for constructing bituminous patches shall be according to Table 4.

Control Charts/Limits. Control charts/limits shall be according to QC/QA Class I requirements, except density shall be plotted on the control charts within the following control limits:

TABLE 6. DENSITY CONTROL LIMITS		
Mixture	Parameter	Individual Test
12.5 mm / 9.5 mm	Ndesign ≥ 90	92.0 – 96.0%
12.5 mm / 9.5 mm	Ndesign < 90	92.5 – 97.4%
19.0 mm / 25.0 mm	Ndesign ≥ 90	93.0 – 96.0%
19.0 mm / 25.0 mm	Ndesign < 90	93.0 – 97.4%

Basis of Payment. On resurfacing projects, this work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On resurfacing projects in which polymer modifiers are required, this work will be paid for at the contract unit price per metric ton (ton) for POLYMERIZED BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, POLYMERIZED LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, POLYMERIZED LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and POLYMERIZED BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On full-depth pavement projects, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE PAVEMENT, (FULL-DEPTH), SUPERPAVE, of the thickness specified.

On projects where widening is constructed and the entire pavement is then resurfaced, the binder for the widening will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition, Ndesign, and thickness specified. The surface and binder used to resurface the entire pavement will be paid for according to the paragraphs above for resurfacing projects.

80010

TEMPORARY CONCRETE BARRIER (BDE)

Effective: October 1, 2002
Revised: November 1, 2003

Revise Section 704 of the Standard Specifications to read:

"SECTION 704. TEMPORARY CONCRETE BARRIER

704.01 Description. This work shall consist of furnishing, placing, maintaining, relocating and removing precast concrete barrier at temporary locations as shown on the plans or as directed by the Engineer.

704.02 Materials. Materials shall meet the requirements of the following Articles of Section 1000 - Materials:

Item	Article/Section
(a) Portland Cement Concrete	1020
(b) Reinforcement Bars (Note 1)	1006.10(a)(b)
(c) Connecting Pins and Anchoring Pins	1006.09
(d) Connecting Loop Bars (Note 2)	
(e) Rapid Set Mortar (Note 3)	

Note 1. Reinforcement bars shall be Grade 400 (Grade 60).

Note 2. Connecting loop bars shall be smooth bars conforming to the requirements of ASTM A 36.

Note 3. Rapid set materials shall be obtained from the Department's approved list of Packaged, Dry, Rapid Hardening Cementitous Materials for Concrete Repairs. For a rapid set mortar mixture, one part packaged rapid set cement shall be combined with two parts fine aggregate, by volume or a packaged rapid set mortar shall be used. Mixing of the rapid set mortar shall be according to the manufacturer's instructions.

CONSTRUCTION REQUIREMENTS

704.03 General. Precast concrete barrier produced after October 1, 2002 shall meet National Cooperative Highway Research Program (NCHRP) Report 350, Category 3, Test Level 3 requirements and have the F shape. Precast concrete barrier shall be constructed according to the Bureau of Materials and Physical Research's Policy Memorandum "Quality Control/Quality Assurance Program for Precast Concrete Products", applicable portions of Sections 504 and 1020, and to the details shown on the plans.

Precast units shall not be removed from the casting beds until a flexural strength of 2,000 kPa (300 psi) or a compressive strength of 10,000 kPa (1400 psi) is attained. When the

concrete has attained a compressive strength according to Article 1020.04, and not prior to four days after casting, the units may be loaded, shipped and used.

704.04 Installation. F shape barrier units shall be seated on bare, clean pavement or paved shoulder and pinned together in a smooth, continuous line at the exact locations provided by the Engineer. The barrier unit at each end of the installation shall be secured to the pavement or paved shoulder using six anchoring pins and protected with an impact attenuator as shown on the plans.

F shape and New Jersey shape barrier units shall not be mixed in the same run.

Barrier units or attachments damaged during transportation or handling, or by traffic during the life of the installation, shall be repaired or replaced by the Contractor at his/her expense. The Engineer will be the sole judge in determining which units or attachments require repair or replacement.

The temporary barriers shall be removed when no longer required by the contract. After removal, all anchoring holes in the pavement or paved shoulder shall be filled with a rapid set mortar. Only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.

704.05 New Jersey Shape Barrier. New Jersey shape barrier produced prior to October 1, 2002 according to earlier Department standards, may be used until January 1, 2008.

Barrier units or attachments damaged during transportation or handling, or by traffic during the life of the installation, shall be repaired or replaced by the Contractor at his/her expense. The Engineer will be the sole judge in determining which units or attachments require repair or replacement.

F shape and New Jersey shape barrier units shall not be mixed in the same run.

The barrier unit at each end of the installation shall be secured to the pavement or paved shoulder using six dowel bars and protected with an impact attenuator as shown on the plans.

The temporary barriers shall be removed when no longer required by the contract. After removal, all anchoring holes in the pavement or paved shoulder shall be filled with a rapid set mortar. Only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.

704.06 Method of Measurement. Temporary concrete barrier will be measured for payment in meters (feet) in place along the centerline of the barrier. When temporary concrete barrier is relocated within the limits of the jobsite, the relocated barrier will be measured for payment in meters (feet) in place along the centerline of the barrier.

704.07 Basis of Payment. When the Contractor furnishes the barrier units, this work will be paid for at the contract unit price per meter (foot) for TEMPORARY CONCRETE BARRIER or RELOCATE TEMPORARY CONCRETE BARRIER.

When the Department furnishes the barrier units, this work will be paid for at the contract unit price per meter (foot) for TEMPORARY CONCRETE BARRIER, STATE OWNED or RELOCATE TEMPORARY CONCRETE BARRIER, STATE OWNED.

Impact attenuators will be paid for separately."

80092

TEMPORARY EROSION CONTROL (BDE)

Effective: November 1, 2002

Revise the fifth sentence of the third paragraph of Article 280.04(a) of the Standard Specifications to read:

"This work may be constructed of hay or straw bales, extruded UV resistant high density polyethylene panels, erosion control blanket, mulch barrier, aggregate barriers, excavation, seeding, or mulch used separately or in combination, as approved, by the Engineer."

Add the following paragraphs after the fifth paragraph of Article 280.04(a) of the Standard Specifications.

"A ditch check constructed of extruded, UV resistant, high density polyethylene panels, "M" pins and erosion control blanket shall consist of the following materials:

Extruded, UV resistant, high density polyethylene panels shall have a minimum height of 250 mm (10 in.) and minimum length of 1.0 m (39.4 in.). The panels shall have a 51 mm (2 in.) lip along the bottom of the panel. Each panel shall have a single rib thickness of 4 mm (5/32 in.) with a 12 mm (1/2 in.) distance between the ribs. The panels shall have an average apparent opening size equal to 4.75 mm (No. 4) sieve, with an average of 30 percent open area. The tensile strength of each panel shall be 26.27 kN/m (1800 lb/ft) in the machine direction and 7.3 kN/m (500 lb/ft) in the transverse direction when tested according to ASTM D 4595.

"M" pins shall be at least 76 mm (3 in.) by 686 mm (27 in.), constructed out of deformed grade C1008 D3.5 rod (0.211 in. diameter). The rod shall have a minimum tensile strength of 55 MPa (8000 psi).

Erosion control blanket shall conform to Article 251.04.

A section of erosion control blanket shall be placed transverse to the flowline direction of the ditch prior to the construction of the polyethylene ditch check. The length of the section shall extend from the top of one side of the ditch to the top of the opposite side of the ditch, while the width of the section shall be one roll width of the blanket. The upstream edge of the erosion control blanket shall be secured in a 100 mm (4 in.) trench. The blanket shall be secured in the trench with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge before the trench is backfilled. Once the upstream edge of the blanket is secured, the downstream edge shall be secured with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge. The polyethylene ditch check shall be installed in the middle of the erosion control blanket, with the lip of each panel facing outward.

The ditch check shall consist of two panels placed back to back forming a single row. Placement of the first two panels shall be at the toe of the backslope or sideslope, with the panels extending across the bottom of the ditch. Subsequent panels shall extend both across the bottom of the ditch and up the opposite sideslope, as well as up the original backslope or sideslope at the distance determined by the Engineer.

The M pins shall be driven through the panel lips to secure the panels to the ground. M pins shall be installed in the center of the panels with adjacent panels overlapping the ends a minimum of 50 mm (2 in.). The pins shall be placed through both sets of panels at each overlap. They shall be installed at an interval of three M pins per one meter (39 in.) length of ditch check. The panels shall be wedged into the M pins at the top to ensure firm contact between the entire bottom of the panels and the soil."

80087

TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: April 1, 1992
Revised: January 1, 2005

To ensure a prompt response to incidents involving the integrity of work zone traffic control, the Contractor shall provide a telephone number where a responsible individual can be contacted 24 hours-a-day.

When the Engineer is notified, or determines a traffic control deficiency exists, he/she will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 12 hours based upon the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

A deficiency may be any lack of repair, maintenance, or non-compliance with the traffic control plan. A deficiency may also be applied to situations where corrective action is not an option such as the use of non-certified flaggers for short term operations; working with lane closures beyond the time allowed in the contract; or failure to perform required contract obligations such as traffic control surveillance.

If the Contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either $1,000 or 0.05 percent of the awarded contract value, whichever is greater. For those deficiencies where corrective action was not an option this monetary deduction will be immediate.

In addition, if the Contractor fails to respond, the Engineer may correct the deficiency and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of his/her contractual requirements or responsibilities.

57291

TRAFFIC SIGNAL GROUNDING (BDE)

Effective: April 1, 2006

Add the following paragraphs to the end of Article 807.01 of the Standard Specifications:

"The grounding system 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 1.5 m (5 ft) of slack 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 ground conductor shall be connected in the service installation. At no other point in the traffic signals system shall the neutral and ground conductors be connected."

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 Grounding	1076.04
(b) Conduit	1088.01"

Revise the last sentence of Article 873.05 of the Standard Specifications to read:

"The type specified will indicate the method of installation and whether the electric cable is Service, Signal, Lead-in, Communication, or Grounding."

Revise the heading of Article 1076.04 of the Standard Specifications to read:

"**1076.04 Electric Cable – Signal, Lead-in, Communication, Service, and Grounding.**"

Add the following paragraph to the end of Article 1076.04 of the Standard Specifications:

"(e) 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 4 . In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather then clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

METHOD OF MEASUREMENT The unit of measurement is in hours.

BASIS OF PAYMENT This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

20338

TRUCK BED RELEASE AGENT (BDE)

Effective: April 1, 2004

Add the following sentence after the third sentence of the first paragraph of Article 406.14 of the Standard Specifications.

"In addition to the release agent, the Contractor may use a light scatter of manufactured sand (FA 20 or FA 21) evenly distributed over the bed of the vehicle."

80123

VARIABLY SPACED TINING (BDE)

Effective: August 1, 2005

Revise the first sentence of the third paragraph of Article 420.11(e)(1) of the Standard Specifications to read:

"The metal comb shall consist of a single line of tempered spring steel tines variably spaced as shown in the table below and securely mounted in a suitable head."

Replace the sixth sentence of the third paragraph of Article 420.11(e)(1) of the Standard Specifications to read:

"The tining device shall be operated so as to a produce a pattern of grooves, 3 to 5 mm (1/8 in. to 3/16 in.) deep and 2.5 to 3.2 mm (1/10 in. to 1/8 in.) wide across the pavement. The tining device shall be operated at a 1:6 skew across the pavement for facilities with a posted speed limit of 55 mph or greater. The tining pattern shall not overlap or leave gaps between successive passes."

Add the following table after the third paragraph of Article 420.11(e)(1) of the Standard Specifications:

Center to Center Spacings of Metal Comb Tines mm (in.) (read spacings left to right)				
34 (1 5/16)	36 (1 7/16)	47 (1 7/8)	54 (2 1/8)	48 (1 7/8)
43 (1 11/16)	32 (1 1/4)	31 (1 1/4)	27 (1 1/16)	36 (1 7/16)
29 (1 1/8)	46 (1 13/16)	21 (13/16)	43 (1 11/16)	23 (7/8)
42 (1 5/8)	52 (2 1/16)	24 (15/16)	18 (11/16)	28 (1 1/8)
40 (1 9/16)	34 (1 5/16)	27 (1 1/16)	26 (1)	25 (1)
27 (1 1/16)	20 (13/16)	37 (1 7/16)	38 (1 1/2)	52 (2 1/16)
51 (2)	45 (1 3/4)	37 (1 7/16)	43 (1 11/16)	53 (2 1/16)
27 (1 1/16)	37 (1 7/16)	42 (1 5/8)	41 (1 5/8)	29 (1 1/8)
43 (1 11/16)	45 (1 3/4)	44 (1 3/4)	30 (1 3/16)	37 (1 7/16)
33 (1 5/16)	40 (1 9/16)	28 (1 1/8)	31 (1 1/4)	50 (1 15/16)
34 (1 5/16)	45 (1 3/4)	20 (13/16)	45 (1 3/4)	50 (1 15/16)
53 (2 1/16)	51 (2)	29 (1 1/8)	25 (1)	18 (11/16)
53 (2 1/16)	18 (11/16)	38 (1 1/2)	51 (2)	40 (1 9/16)
17 (11/16)	49 (1 15/16)	50 (1 15/16)	39 (1 9/16)	51 (2)
36 (1 7/16)	36 (1 7/16)	38 (1 1/2)	46 (1 13/16)	29 (1 1/8)
38 (1 1/2)	50 (1 15/16)	24 (15/16)	33 (1 5/16)	

80149

WATER BLASTER WITH VACUUM RECOVERY (BDE)

Effective: April 1, 2006

Add the following to Article 783.02 of the Standard Specifications.

"(c) Water Blaster with Vacuum Recovery ..... 1101.17"

Add the following to Section 1101 of the Standard Specifications.

"**1101.17 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

WEIGHT CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: April 1, 2001
Revised: August 1, 2002

The Contractor shall provide accurate weights of materials delivered to the contract for incorporation into the work (whether temporary or permanent) and for which the basis of payment is by weight. These weights shall be documented on delivery tickets which shall identify the source of the material, type of material, the date and time the material was loaded, the contract number, the net weight, the tare weight when applicable and the identification of the transporting vehicle. For aggregates, the Contractor shall have the driver of the vehicle furnish or establish an acceptable alternative to provide the contract number and a copy of the material order to the source for each load. The source is defined as that facility that produces the final material product that is to be incorporated into the contract pay items.

The Department will conduct random, independent vehicle weight checks for material sources according to the procedures outlined in the Documentation Section Policy Statement of the Department's Construction Manual and hereby incorporated by reference. The results of the independent weight checks shall be applicable to all contracts containing this Special Provision. Should the vehicle weight check for a source result in the net weight of material on the vehicle exceeding the net weight of material shown on the delivery ticket by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. No adjustment in pay quantity will be made. Should the vehicle weight check for a source result in the net weight of material shown on the delivery ticket exceeding the net weight of material on the vehicle by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. The Engineer will adjust the net weight shown on the delivery ticket to the checked delivered net weight as determined by the independent vehicle weight check.

The Engineer will also adjust the method of measurement for all contracts for subsequent deliveries of all materials from the source based on the independent weight check. The net weight of all materials delivered to all contracts containing this Special Provision from this source, for which the basis of payment is by weight, will be adjusted by applying a correction factor "A" as determined by the following formula:

$$A = 1.0 - \left(\frac{B-C}{B}\right); \text{ Where } A \le 1.0; \left(\frac{B-C}{C}\right) > 0.50\% \text{ (0.70\% for aggregates)}$$

Where A = Adjustment factor
B = Net weight shown on delivery ticket
C = Net weight determined from independent weight check

The adjustment factor will be applied as follows:

Adjusted Net Weight = A x Delivery Ticket Net Weight

The adjustment factor will be imposed until the cause of the deficient weight is identified and corrected by the Contractor to the satisfaction of the Engineer. If the cause of the deficient weight is not identified and corrected within seven (7) calendar days, the source shall cease delivery of all materials to all contracts containing this Special Provision for which the basis of payment is by weight.

Should the Contractor elect to challenge the results of the independent weight check, the Engineer will continue to document the weight of material for which the adjustment factor would be applied. However, provided the Contractor furnishes the Engineer with written documentation that the source scale has been calibrated within seven (7) calendar days after the date of the independent weight check, adjustments in the weight of material paid for will not be applied unless the scale calibration demonstrates that the source scale was not within the specified Department of Agriculture tolerance.

At the Contractor's option, the vehicle may be weighed on a second independent Department of Agriculture certified scale to verify the accuracy of the scale used for the independent weight check.

80048

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: January 1, 2003
Revised: November 1, 2004

Add the following to Article 702.01 of the Standard Specifications:

"All devices and combinations of devices shall meet the requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 for their respective categories. The categories are as follows:

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, flexible delineators and plastic drums with no attachments. Category 1 devices shall be crash tested and accepted or may be self-certified by the manufacturer.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include drums and vertical panels with lights, barricades and portable sign supports. Category 2 devices shall be crash tested and accepted for Test Level 3.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions, truck mounted attenuators and other devices not meeting the definitions of Category 1 or 2. Category 3 devices shall be crash tested and accepted for either Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals and area lighting supports. Currently, there is no implementation date set for this category and it is exempt from the NCHRP 350 compliance requirement.

The Contractor shall provide a manufacturer's self-certification letter for each Category 1 device and an FHWA acceptance letter for each Category 2 and Category 3 device used on the contract. The letters shall state the device meets the NCHRP 350 requirements for its respective category and test level, and shall include a detail drawing of the device."

Delete the third, fourth and fifth paragraphs of Article 702.03(b) of the Standard Specifications.

Delete the third sentence of the first paragraph of Article 702.03(c) of the Standard Specifications.

Revise the first sentence of the first paragraph of Article 702.03(e) of the Standard Specifications to read:

"Drums shall be nonmetallic and have alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes."

Add the following to Article 702.03 of the Standard Specifications:

"(h) Vertical Barricades. Vertical barricades may be used in lieu of cones, drums or Type II barricades to channelize traffic."

Delete the fourth paragraph of Article 702.05(a) of the Standard Specifications.

Revise the sixth paragraph of Article 702.05(a) of the Standard Specifications to read:

"When the work operations exceed four days, all signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, a temporary sign stand may be used to support a sign at 1.2 m (5 ft) minimum where posts are impractical. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 30 m (100 ft) to avoid obstacles, hazards or to improve sight distance, when approved by the Engineer. "ROAD CONSTRUCTION AHEAD" signs will also be required on side roads located within the limits of the mainline "ROAD CONSTRUCTION AHEAD" signs."

Delete all references to "Type 1A barricades" and "wing barricades" throughout Section 702 of the Standard Specifications.

80097

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within **340** working days.

80071

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. These contract provisions shall apply to all word 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

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

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 advised 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 listed on the wage determination unless the Administrator of the 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 suncontractors.

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 that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked 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 he 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 form the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract.

Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S. C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification,

distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more).

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an 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

"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.

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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 tie participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealing.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

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Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion-Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision

NOTICE

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at http://www.dot.il.gov/desenv/delett.html.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at http://www.dot.il.gov/desenv/subsc.html.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.