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

66

REVISED: 3/30/07

Letting April 27, 2007

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

NOTICE TO PROSPECTIVE BIDDERS
This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.
(SEE INSTRUCTIONS ON THE INSIDE OF COVER)

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

Illinois Department of Transportation

Springfield, Illinois 62764

Contract No. 64857
WINNEBAGO County
Section 201-1BR
Route FAI 39
Project IM-391(15)116
District 2 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

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. 64857
WINNEBAGO County
Section 201-1BR
Project IM-391(15)116
Route FAI 39
District 2 Construction Funds

This project consists of superstructure retrofits with a post-tensioning system, installation of an anti-icing system, and replacement of the bridge deck overlay on the structures (SN 101-0133 and 101-0134) carrying Interstate 39 over the Kishwaukee River located 0.8 mile south of Blackhawk Road near Rockford.

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.

ILLINOIS DEPARTMENT OF TRANSPORTATION
SCHEDULE OF PRICES
CONTRACT NUMBER - 64857

State Job # - C-92-124-06
PPS NBR - 2-15840-0000
County Name - WINNEBAGO- -
Code - 201 - -
District - 2 - -
Section Number - 201-1BR

Project Number IM-039-1/015/116

Route FAI 39

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0322121	SHEET WAT PRF MEM SYS	SQ YD	9,984.000				
X0325303	STR REP CON DP OVER 5	SQ FT	16.000				
X0325305	STR REP CON DP = < 5	SQ FT	295.000				
X0325707	F&I POST-TENSION SYS	L SUM	1.000				
X0325708	F&I ANTI-ICING SYSTEM	L SUM	1.000				
X0325709	SCRN WALL CONN REPAIR	L SUM	1.000				
X0325710	AN-ICE SYS MAIN & WAR	L SUM	1.000				
X0325712	RELOC EXIST ELEC SYS	L SUM	1.000				
40200500	AGG SURF CSE A 6	SQ YD	422.000				
40603345	HMA SC "D" N90	TON	1,165.000				
40603575	P HMA SC "E" N105	TON	1,204.000				
44000086	HMA SURF REM COMPLETE	SQ YD	9,984.000				
44000155	HMA SURF REM 1 1/2	SQ YD	13,387.000				
50102400	CONC REM	CU YD	21.100				
50300255	CONC SUP-STR	CU YD	653.300				

ILLINOIS DEPARTMENT OF TRANSPORTATION
SCHEDULE OF PRICES
CONTRACT NUMBER - 64857

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County Name - WINNEBAGO- -
Code - 201 - -
District - 2 - -
Section Number - 201-1BR

Project Number IM-039-1/015/116

Route FAI 39

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
50300540	FLOOR DRAINS SPL	EACH	256.000				
50800205	REINF BARS, EPOXY CTD	POUND	82,410.000				
52000224	FINGER PLT EXP JT 7	FOOT	77.000				
52000600	FAB REINF ELAS TROUGH	FOOT	78.000				
59000200	EPOXY CRACK INJECTION	FOOT	8.000				
63000000	SPBGR TY A	FOOT	150.000				
63004013	WEATHER TBT 1 SPL FLR	EACH	2.000				
63004045	WEATHER T BAR TERM 5A	EACH	1.000				
63801204	MOD GLAR SCRN SYS SPL	FOOT	600.000				
64200105	SHOULDER RUMBLE STRIP	FOOT	13,680.000				
67000400	ENGR FIELD OFFICE A	CAL MO	12.000				
67100100	MOBILIZATION	L SUM	1.000				
70100410	TRAF CONT-PROT 701416	EACH	1.000				
70100420	TRAF CONT-PROT 701411	EACH	1.000				
70100700	TRAF CONT-PROT 701406	L SUM	1.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION
SCHEDULE OF PRICES
CONTRACT NUMBER - 64857

State Job # - C-92-124-06
PPS NBR - 2-15840-0000
County Name - WINNEBAGO- -
Code - 201 - -
District - 2 - -
Section Number - 201-1BR

Project Number IM-039-1/015/116

Route FAI 39

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
70300220	TEMP PVT MK LINE 4	FOOT	51,800.000				
70301000	WORK ZONE PAVT MK REM	SQ FT	17,267.000				
70400100	TEMP CONC BARRIER	FOOT	4,420.000				
70400200	REL TEMP CONC BARRIER	FOOT	4,360.000				
78005110	EPOXY PVT MK LINE 4	FOOT	31,610.000				
78300100	PAVT MARKING REMOVAL	SQ FT	3,850.000				

CONTRACT NUMBER **64857**

THIS IS THE TOTAL BID **$** _____

NOTES:

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

RETURN WITH BID

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

I. GENERAL

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

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

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

II. ASSURANCES

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

B. Felons

1. The Illinois Procurement Code provides:

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

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

C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

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

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

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

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

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

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

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.

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

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

TO BE RETURNED WITH BID

IV. DISCLOSURES

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

B. Financial Interests and Conflicts of Interest

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

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

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

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

C. Disclosure Form Instructions

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

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

CERTIFICATION STATEMENT

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

_____
(Bidding Company)

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

_____ _____
Signature of Authorized Representative Date

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

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

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

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

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

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

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

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

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

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

D. Bidders Submitting More Than One Bid

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

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

_____

_____

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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

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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.

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Illinois Department of Transportation

Contract No. 64857
WINNEBAGO County
Section 201-1BR
Project IM-391(15)116
Route FAI 39
District 2 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				TOTAL EMPLOYEES		MINORITY EMPLOYEES	
JOB CATEGORIES	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.		APPREN-TICES		ON THE JOB TRAINEES					
	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. 64857
WINNEBAGO County
Section 201-1BR
Project IM-391(15)116
Route FAI 39
District 2 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. 64857
WINNEBAGO County
Section 201-1BR
Project IM-391(15)116
Route FAI 39
District 2 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. 64857
WINNEBAGO County
Section 201-1BR
Project IM-391(15)116
Route FAI 39
District 2 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., April 27, 2007. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.

2. **DESCRIPTION OF WORK**. The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

   Contract No. 64857
   WINNEBAGO County
   Section 201-1BR
   Project IM-391(15)116
   Route FAI 39
   District 2 Construction Funds

This project consists of superstructure retrofits with a post-tensioning system, installation of an anti-icing system, and replacement of the bridge deck overlay on the structures (SN 101-0133 and 101-0134) carrying Interstate 39 over the Kishwaukee River located 0.8 mile south of Blackhawk Road near Rockford.

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

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

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

By Order of the
Illinois Department of Transportation

Milton R. Sees, Acting Secretary

FAI Route 39 (I-39)
Project IM-039-1 (015) 116
Section 201-1-BR
Winnebago County
Contract 64857

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2007

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

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

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

TABLE OF CONTENTS

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2007, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAI Route 39 (I-39), Project IM-039-1 (015) 116, Section: 201-1-BR, Winnebago County, Contract: 64857, 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

Kishwaukee Bridges are located on I-39 southeast of Rockford, Illinois, 0.8 miles south of Blackhawk Road between US-20 and Baxter Road interchanges.

DESCRIPTION OF PROJECT

Installation of external post-tensioning system internal to the existing dual, 5-span precast, post-tensioned segmental box girder bridge structures. Installation of a Fixed Anti-icing Technology System on the bridges and approaches and replacement of the existing bridge overlay and waterproofing membrane. Extension of existing deck drains and repair of concrete cracks, spalls and screen wall connections. Removal of existing joints @ abutments on S.N. 101-0134 and replacement with hinged plate joints.

RESTRICTIONS TO CLOSURES AND COMPLETION DATES

The Contractor shall perform his work in such a matter that road closures for Stages 1 and 2 are limited to one continuous closure for each stage of up to a maximum of ten (10) calendar weeks.

Both structures shall be fully open to traffic from June 29, 2007, 1:00 p.m. through July 8, 2007, 11:59 p.m. and from November 3, 2007, 11:59 p.m. through March 16, 2008 11:59 p.m.

The Contractor shall perform his work in such a manner that the project is complete, on or prior to May 22, 2008. The Final System Acceptance as described in the Special Provisions for the FIXED ANTI-ICING SPRAY TECHNOLOGY (FAST) SYSTEM shall be excluded from this requirement. If the Contractor fails to complete the project by the above completion dates or exceeds the maximum closure durations noted above, the Contractor shall be charged liquidated damages by the Department of TWO THOUSAND DOLLARS ($5,000) a day for each day the project is not opened beyond the opening dates. If in the event additional traffic control and protection is required to open the road or after the road is open to traffic, it shall be at no additional cost to the Department.

TRAFFIC CONTROL PLAN
Effective January 14, 1999

Traffic Control shall be according to the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the National Manual on Uniform Traffic Control Devices for Streets and Highways, Illinois Supplement to the National Manual on 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 Articles 107.09 and 107.14 of the Standard Specifications for Road and Bridge Construction and the following Highway Standards relating to traffic control.

Standards:

630001 642001 701400 701406 701411 701416 701426 702001 704001 720011 728001 729001 780001

Details:

25.4 - Delineation of center barrier of two-lane two way operation
87.4 – Typical median crossover (with emergency opening)

Signs:

No additional bracing shall be allowed on post-mounted signs.

Post-mounted signs shall be installed using standard 720011, 728001, 729001, on 4”X4” wood posts, or on any other “break away” connection if accepted by the FHWA and corresponding letter is provided to the resident.

All signs are required on both sides of the road when the median is greater than 10 feet and on one way roadways.

The “WORKERS” (W21-1a(O)-48) signs shall be replaced with symbol “Right or Left Lane Closed Ahead” (W4-2R or L(O)-48) signs on multilane roadways.

“BUMP” (W8-1(O)48) signs shall be installed as directed by the Engineer.

“UNEVEN LANES” W8-11(O)48 signs shall be installed at 2 mile intervals or as directed by the Engineer on roadways where the posted speed limit is greater than 40 mph.

“LOW SHOULDER” W8-9(O)48 signs shall be installed at 2 mile intervals or as directed by the Engineer.

When covering existing Department signs, no tape shall be used on the reflective portion of the sign. Contact the District sign shop for covering techniques.

Devices:

A minimum of 3 drums spaced at 1.2 meters (4 feet) shall be placed at each return when the side road is open.

Direction Indicator Barricades shall exclusively be used in lane closure tapers. They shall be used only when traffic is being merged with an adjacent through lane or shifted onto a median crossover.

Vertical barricades shall not be used in weaves, and in the gore areas on Highway Standard 701411.

Prior to the opening of Stage I and Stage II to traffic, the Contractor shall be required to install the proposed guardrail and terminals on the completed approaches to the bridge.

Lights:

Steady burn mono-directional lights are required on devices delineating a widening trench.

Pavement Marking:

All temporary pavement markings that will be operational during the winter months (December through March) shall be paint.

Temporary pavement markings shall not be included in the cost of the standard rather it shall be paid for separately at the contract unit prices of specified temporary pavement marking items.

Standards 701400, 701402, 701406, 701416, 701421, 701422, 701423, and 701446: The Contractor shall equip all machinery and vehicles with revolving amber lights, installed so the illumination is visible from all directions.

The median crossover will generally not be available for Contractor use. It may be used only when both lanes adjacent to the median are closed. Under no condition shall left turn lanes be made to cross the median from lanes open to traffic.

Parking of personal vehicles within the interstate right of way will be strictly prohibited. Parking of construction equipment within the right of way will be permitted only at locations approved by the Engineer.

The Contractor shall be required to notify the Winnebago County Highway Department, the corresponding Township Commissioner, emergency response agencies (i.e.: fire, ambulance, police), school bus companies and the Department of Transportation (Bureau of Project Implementation) regarding any changes in traffic control.

Guardrail work shall be completed using Traffic Control and Protection Standard 701006 and Article 701.17(f).

ENGINEER'S FIELD OFFICE TYPE A
Effective 08-06-03 (Revised 06-27-06)

Revise Article 670.02 (I) of the Standard Specifications to read:

(i) Provide a minimum of three (3) communications paths to each field office. The configuration would include (1) a land based, touch-tone telephone line with answering

machine and fax capabilities (2) two wireless phone connection with a minimum of 500 anytime calling minutes each per month and (3) a data connection to access State of Illinois network for the exclusive use of the Engineer.

Arrangements for installation, connection and disconnection to the State's network are to be made through the Regional IT Manager at (815) 284-5495. Monthly billings for the data connection will be sent directly to the contractor and the contractor will directly pay the Illinois Department of Central Management Services for this service. All costs necessary to complete the connection and disconnection to the State's network will be paid for under Article 109.04.

All other communication costs shall be contracted at the lowest cost available for the region of service. Any deviation from the desired configurations shall be subject to the approval of the District Construction Engineer.

Revise the last line of the first paragraph of Article 670.07 of the Standard Specifications to read:

This price shall include all utility costs and shall reflect the salvage value of the building or buildings, equipment, and furniture which becomes the property of the Contractor after release by the Engineer, except the Department will pay that portion of each monthly long distance telephone bill in excess of $150.00 for the land based telephone line.

MODULAR GLARE SCREEN SYSTEM (SPECIAL)

Description. This work consists of furnishing, installing, and maintaining a temporary modular glare screen system on top of temporary barrier according to the modular glare screen system manufacturer's specifications. It shall also include all glare screen work associated with relocating the concrete barriers for Stage 2. The temporary modular glare screen system shall consist of modular base units attached to the top of concrete barrier rail with blades evenly spaced and securely mounted to base units.

Materials.

(a) Specifications. The modular base units and glare screen blades shall be compatible so the base unit and blades can be securely attached to each other. The base unit and blades shall be supplied from the same manufacturer.

The length of individual modular base units shall be a maximum of 10 foot or no longer than the nominal 10 foot length of the individual temporary concrete barrier sections. The width of the modular base units shall be a maximum width of 6 inches or no wider than the top of the temporary concrete barrier rail.

The glare screen blades shall be FHWA highway green in color and made of impact resistant non-metallic high-density plastic material. The blades shall have a height from 24 inches to 30 inches and a width from 6 inches to 9 inches. The same uniform sized blades shall be used throughout the project.

(b) Producers. The following modular glare screen systems may be used:

(1) Carsonite Modular Guidance System
Carsonite International
1301 Hot Springs Road
Carson City, NV 89706
Phone: (800) 327-9647

(2) Safe-Hit Glare System
Safe-Hit Corporation
1390 W. Winton Avenue
Building 11
Hayward, CA 94545
Phone: (800) 537-8958

(3) FlexStake Glare Screen
FlexStake, Inc.
2348 Bruner Lane SE
Ft. Myers, FL 33912
Phone: (800) 348-9839

Installation. The contractor shall install the temporary modular glare screen system according to the manufacturer's instructions. The temporary modular glare screen system shall be installed so that it is centered along the longitudinal axis length to the top of the concrete barrier rail and is flush with the rail so that the modular base unit does not extend over the joints between the concrete barrier sections. The glare screen blades shall be installed so the combination of blade width and spacing provide for a minimum 22 degree sight cut-off angle.

The contractor shall, at their own expense, maintain and repair the temporary modular glare screen system throughout the duration of the project.

Method of Measurement. The temporary modular glare screen system will be measured for payment in feet in place, measured along the centerline of the modular glare screen system.

Basis of Payment. The installation, maintenance, and removal of the temporary modular glare screen system will be paid at the contract unit price per foot for MODULAR GLARE SCREEN SYSTEM (SPECIAL).

FURNISHING AND INSTALLING POST-TENSIONING SYSTEM

Description.

General.

This work shall consist of furnishing, installing, stressing and grouting prestressing steel in accordance with the details shown on the Plans and the requirements of these Special Provisions.

It shall also include the furnishing and installing of any appurtenant items necessary for the particular prestressing 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 shall install the external draped post-tensioning system as detailed in the Plans and described in these Special Provisions. The Contractor may propose for consideration certain variations from the thread-bar prestressing systems shown in the Plans for the Bottom Slab Deviators and the Pier Deviators.

Restrictions to Contractor Proposed Option.

Any prestressing system proposed by the Contractor shall comply with the following:

1. Materials and devices used in the prestress system shall conform to the requirements of the following Materials Section of these Special Provisions.

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, 2002; and shall be equivalent to the ultimate strength provided by the original design.

5. Stresses in the concrete and prestressing 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 prestressing system is proposed to be used.

8. The Contractor submits complete shop drawings including the prestressing scheme and system, reinforcing steel, concrete cover, and design calculations (including short and long term prestress losses) for the Engineer’s review.

Submittals.

The Contractor shall submit detailed shop drawings in accordance with the IDOT Memo for all District Engineers, dated May 30, 2001, titled, “Shop Drawing Procedures”. The shop drawings shall include, but are not limited to:

A. A complete description of, and details covering, each of the prestressing systems to be used for permanent tendons and bars. This shall include:

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

   2. Properties of each of the components of the prestressing system.

   3. Details covering assembly of each type of prestressing tendon.

   4. Equipment to be used in the prestressing sequence.

   5. Procedure and sequence of operations for prestressing and securing tendons.

   6. Procedure for releasing the prestressing steel elements.

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

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

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

D. For the operation of grouting prestressing 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 prestressing system and procedures to be use including stress-strain curves typical of the prestressing 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 coefficient, 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 H.2 and H.3, including the proposed tendons to be tested.

<u>Materials.</u>

A. General.

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

B. Prestressing Steel.

Strand.

Unless otherwise noted on the Plans, strand shall be uncoated, Grade 270, low-relaxation seven-wire strand conforming to the requirements of AASHTO M 203.

Thread-Bar.

Unless otherwise noted on the Plans, prestress bars shall be uncoated, Grade 150, high strength deformed thread bars conforming to the requirements of AASHTO M 275 (ASTM A 722), Type II. All nuts shall be spherical hex nuts conforming to the requirements of ASTM A 536.

C. Thread-Bar Couplers.

Thread-bar couplers shall meet the requirements of AASHTO M 275 (ASTM A 722). Bar couplers shall be used only at locations specifically shown on the Plans or approved by the Engineer. A bar coupler shall develop at least 96 percent of the required strength of the bar with a minimum elongation of 2 percent when tested in the unbonded condition in 10 foot gauge lengths, without failure either of the coupler or the thread-bar.

Testing of couplers shall be performed using samples of the prestressing bar to be used on the project. The test specimen shall be assembled in an unbonded state and, in testing, the anticipated set shall not be exceeded.

Only threaded type couplers shall be used with post-tensioning thread-bars. Post tensioning thread-bars shall be threaded into the coupler to 1/2 the length of the coupler ± ¼ inch so that when two bars are coupled in a coupler, the length of each bar positively engaged in the coupler shall be half the coupler's length within the acceptable tolerances. No coupling or splicing will be allowed with strands.

D. Prestress Anchorages.

All prestressing steel shall be secured at the ends by means of permanent type anchoring devices. Prestress anchorages shall develop at least 96 percent of the minimum specified ultimate tensile strength of the prestressing steel.

Testing of anchorage devices shall be performed in accordance with Article 10.3.2.3 of the AASHTO LRFD Bridge Construction Specifications, 3rd Edition, 2004 using samples representing the type of prestressing 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 prestressing force in the tendon may be verified prior to the removal of the stressing equipment.

For abutment 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.

For pier tendon anchorages, the anchorage assembly will be contained within a section of standard weight galvanized steel pipe as shown in the plans. The final dimensions of the pipe shall be determined by the Contractor based on the dimensions of the assembly. The pipe shall be bolted to the pier deviator using anchor bolts and the anchorage assembly shall be grouted in place as detailed in the plans.

Prestress anchorage devices shall effectively distribute prestressing 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.

E. Permanent Grout Caps.

Use permanent grout caps made from fiber reinforced polymer or ASTM A 240 Type 316L stainless steel. The resins used in the fiber reinforced polymer shall be nylon, Acrylonitrite Butadiene Styrene (ABS) or polyester. Seal the cap with “O” ring seals or precision fitted flat gaskets placed against the bearing plate. Place a grout vent on the top of the cap. Grout caps must be rated for a minimum pressure rating of 150 psi. Use ASTM A 240 Type 316L stainless steel bolts to attach the cap to the anchorage. When stainless steel grout caps are supplied, provide certified test reports documenting the chemical analysis of the steel.

F. Ducts and Pipes.

General.

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 and shall have sufficient strength to prevent distortion or displacement of the ducts during concrete placement.

The interior diameter of ducts for single strand, bar or wire tendons shall be at least ¼ inch greater than the nominal diameter of the tendon. 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 prestress steel when tendons consisting of more than one strand, bar or wire are placed by the pull-through method.

The pipe that is embedded in concrete shall be galvanized steel. The pipe shall be bent so as to accurately conform to the alignment of the smooth polyethylene duct and tendons housed by the steel pipe.

Material Properties.

The type of duct material used for the external draped tendons shall be smooth plastic polyethylene or polypropylene duct. The duct material used for thread-bar shall be corrugated polyethylene or polypropylene duct.

a. The external draped tendons shall run in smooth black polyethylene rigid pipe ducts from 100 percent virgin polyethylene resin meeting the requirements of ASTM D 3350 with a minimum cell class of 344464C. A resin containing antioxidant(s) with a minimum oxidation induction time (OIT) according to ASTM D 3895 of 40 min shall be used. The duct shall be manufactured with a dimensional ratio (DR) of 17 as established by either ASTM D 3350 or ASTM F 714.

b. Steel pipe in the Bottom Slab Deviators and the Pier Deviators shall be galvanized conforming to the requirements of ASTM A 53, Type 3, Grade B. The nominal wall thickness of the pipe shall not be less than that of Schedule 40.

c. Corrugated Plastic (HDPE or HDPP)

(1) Corrugated Polyethylene Plastic. Plastic duct shall be made of high-density polyethylene material and shall conform to the requirements of ASTM D3350-05, 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 PP210B43542 to PP210B65542..The plastic material shall not react with concrete or enhance corrosion of prestress 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 ± 0.01 inches. 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". 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 Commissioner certified test reports verifying that the duct meets specification requirements in regard to force transfer.

d. Corrugated Duct Connections and Fittings. Make all splices, joints, couplings and connections to anchorages with devices or methods (i.e. mechanical couplers, plastic sleeves in conjunction with shrink sleeve) producing a smooth interior alignment with no lips or kinks. Design all connections and fittings to be airtight. Duct tape is not permitted to join or repair duct connections. Construct connections and fittings from polyolefin materials containing antioxidant stabilizer(s) meeting the requirements established for Inlets, Outlets, Valves and Plugs below.

e. External Duct Connections: Use heat welding techniques in making all splices between sections of plastic duct, in accordance with the duct manufacturer's instructions or with mechanical couplers meeting the requirements of these Special Provisions. Ensure all connections have a minimum pressure rating (working pressure) of 100 psi, produce a smooth interior alignment and a connection with no lips or kinks.

f. Mechanical Couplers and Heat Shrink Sleeve: Construct mechanical couplers with stainless steel, plastic or a combination of these materials. Use plastic resins meeting the requirements for plastic ducts to construct plastic couplers. Use ASTM A 240 Type 316 stainless steel to make metallic components. Furnish and install heat shrink sleeves manufactured specifically for the size of the duct being coupled consisting of an irradiated and cross linked high density polyethylene backing for external applications and linear-density polyethylene for internal applications. Ensure the heat shrink sleeves have an adhesive layer that will withstand 150° F operating temperature and meet the requirements of the following table and install the heat shrink sleeves using procedures and methods in accordance with the manufacturer's recommendations.

Property	**Test Method**	**Minimum Requirements**	
		Internal Application	**External Application**
Minimum Fully Recovered Thickness		92 mils	111 mils
Peel Strength	ASTM D 1000	29 pli	46 pli
Softening Point	ASTM E 28	162°F	216ºF
Lap Shear	DIN 30 672M	87 psi	58 psi
Tensile Strength	ASTM D 638	2,900 psi	3,480 psi
Hardness	ASTM D 2240	46 Shore D	52 Shore D
Water Absorption	ASTM D 570	Less than 0.05%	Less than 0.05%
Color		Yellow	Black

g. Inlets, Outlets, Valves and Plugs. Provide permanent grout inlets, outlets, and threaded plugs made of ASTM A 240 Type 316 stainless steel, nylon or polyolefin materials. For products made from nylon a cell class of S-PA0141 (weather resistant) is required. Products made from polyolefin shall contain antioxidant(s) with a minimum Oxidation Induction Time (OIT) according to ASTM D 3895 of not less than 20 minutes. Test the remolded finished polyolefin material for stress crack resistance using ASTM F 2136 at an applied stress of 348 psi resulting in a minimum failure time of 3 hours. All inlets and outlets shall be equipped with pressure rated mechanical shut-off valves or plugs. Inlets, outlets, valves and plugs shall be rated for a minimum pressure rating of 150 psi. Use inlets and outlets with a minimum inside diameter of 3/4 inch for strand and 3/8 inch for thread-bar tendons and four-strand duct. Temporary items, not part of the permanent structure, may be made of any suitable material.

Shipping and Storage of Ducts.

Furnish duct with end caps to seal the duct interior from contamination. Ship in bundles which are capped and covered during shipping and storage. Protect ducts against ultraviolet degradation, crushing, excessive bending, dirt contamination and corrosive elements during transportation, storage and handling. Do not remove end caps supplied with the duct until the duct is incorporated into the bridge component. Store duct in a location that is dry and protected from the sun. Storage must be on a raised platform and completely covered to prevent contamination. If necessary, wash duct before use to remove any contamination.

G. Sampling and Testing.

All testing shall be done in accordance with ASTM Specifications.

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

1. Three samples of 7 foot long prestressing wire or bar for each size from each heat number or production lot.

2. Three samples of 5 foot-long prestressing strand for each size from each heat number or production lot.

3. If bar couplers are to be used, three samples with two specimens each consisting of 4 foot lengths of the specific prestressing bar coupled with a bar coupler from the materials to be used on the project.

4. One unit of each prestress 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.

H. Manufacturer’s Lots.

The manufacturer of prestressing steel, prestress 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 prestressing 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 M 203 (ASTM A 416). Any strand not so identified will not be acceptable.

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

I. Testing of Prestressing Tendons by the Contractor.

General.

The Contractor shall perform certain testing of prestressing tendons as specified herein.

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. The Contractor shall notify the Engineer at least two weeks in advance of performing a friction test.

Dynamic Testing of Unbonded Tendons.

Unbonded tendons are defined as tendons that are located essentially external to the concrete. For unbonded superstructure tendons, the Contractor shall perform two dynamic tests on a representative specimen and the tendon shall withstand, without failure, 500,000 cycles from 60 percent to 66 percent of its minimum specified ultimate strength. In the second test the tendon shall withstand without failure 50 cycles from 40 percent to 80 percent of its minimum specified ultimate strength. The period of each cycle involves the change from the lower stress level to the upper stress level and back to the lower. The specimen used for the second dynamic test need not be the same used for the first dynamic test.

Systems utilizing multiple strands, wires, or bars shall be tested utilizing a test tendon of full size. The test tendon shall duplicate the behavior for the full size tendon and generally shall not have less than 10 percent of capacity for the full size tendon.

In lieu of the dynamic testing, the Contractor may submit data from prior tests. Acceptance of data from prior test is subject to the approval of the Engineer. The Contractor shall notify the Engineer at least two weeks in advance of performing a dynamic test.

J. Grout for Tendons.

General.

Grout used in this project shall be a commercial, prepackaged, cement-based grout mixture, meeting the requirements of these Special Provision and subject to approval by the Engineer. Grout shall meet the conditions outlined in Section 10.9 of AASHTO LRFD Construction Specifications, 3rd Edition, 2004 with 2005 interims.

Grout Properties.

A minimum of 45 days prior to grouting, a 5-lb sample of pre-approved grout must be submitted for quality control testing according to the tests listed in the table below. The sample shall be submitted to an independent Laboratory determined by the Contractor and approved by the Engineer.

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 these Special Provisions, as determined by an independent Laboratory. This information shall include a graph relating compressive strength of the grout to age, covering ages from 24 hours to 28 days.

Water used in the grout shall be potable, clean, and free of injurious quantities of substances known to be harmful to Portland Cement or prestressing steel.

The grout shall be mixed in mechanical mixing equipment capable of continuous mixing which will produce a grout free of lumps and un-dispersed cement. Pre-bagged grout shall be mixed in complete units. Retempering the grout will not be permitted. Grout shall be continuously agitated until it is pumped.

Required Properties.

Grout shall have the following physical properties as certified by the Laboratory and approved by the Engineer:

Property	Test Value	Test Method
Water-Cementitious Ratio	Max. 0.45	--
Total Chloride Ions	Max. 0.08% by weight of cementitious material	ASTM C 1152
Fine Aggregate (if utilized)	Max. Size < No. 50 Sieve	ASTM C 33
Volume Change at 28 days	0.0% to 0.3% at 24 hours and 28 days	ASTM C 1090*
Expansion	Less than or equal to 2.0% for up to 3 hours	ASTM C 940
Compressive Strength (average of 3 cubes)	Min. 3 ksi @ 7days and 6 ksi @ 28 Days	ASTM C 942
Initial Set of Grout	Min. 3 hours Max. 12 hours	ASTM C 953
Fluidity Test** Efflux Time from Flow Cone a) Immediately after Mixing b) 30 min. after mixing with remixing for 30 sec.	 Min. 11 sec./Max 30 sec. or Min 9 sec./Max 20 sec. or Max 30 sec. or Max 30 sec.	 ASTM C 939 ASTM C 939*** ASTM C 939 ASTM C 939***
Bleeding at 3 hours	Max 0.0%	ASTM C 940****
Permeability at 28 days	Max 2500 coulombs at 30 volts for 6 hours	AASHTO T 277 (ASTM C 1202)

* Modify ASTM C 1090 to include verification of both 24 hours and 28 days

** Adjustments to flow rates will be achieved by strict compliance with the Manufacturer's recommendations.

*** Grout fluidity shall meet either the standard ASTM C 939 flow cone test or the modified test described herein. Modify the ASTM C 939 test by filling the cone to the top of the cone instead of to the standard level. The efflux time is the time to fill a 1,000-ml container placed directly under the flow cone.

**** Modified ASTM C940

(a) Condition dry ingredients, mixing water, prestressing strand and test apparatus overnight at 70 to 77°F.
(b) Insert 0.2 gallon of mixed condition grout with conditioned water into the 0.25 gallon graduate cylinder. Mark the level of the top of the grout.
(c) Wrap the strand with 2.0-in wide duct or electrical tape at each end prior to cutting to avoid splaying of the wires when it is cut. Degrease (with acetone or hexane solvent) and wire brush to remove any surface rust on the strand before temperature conditioning. Insert completely a 20-inch length of

conditioned, cleaned, ASTM A 416 seven wire strand 0.5-in diameter into the 0.25 gallon graduated cylinder. Center and fasten the strand so it remains essentially parallel to the vertical axis of the cylinder (possibly using a centralizer). Mark the level of the top of the grout.

(d) Store the mixed grout at the temperature range listed above in (a).

(e) Measure the level of the bleed water every 15 min. for the first hour and then hourly afterward for 2 hours.

(f) Calculate the bleed water, if any, at the end of the 3-hour test period and the resulting expansion per the procedures outlined in ASTM C 940, with the quantity of bleed water expressed as a % of the initial grout volume. Note if the bleed water remains above or below the grout.

Construction Requirements.

A. Post-Tensioning Technician.

The post-tensioning supplier shall furnish to the job site a qualified technician with at least 5 years of experience with the installation of the supplied post-tensioning systems 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 Prestressing Steel Prior to Installation.

All prestressing steel shall be protected against physical damage at all times from manufacture to grouting or encasing in concrete. Prestressing 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.

Prestressing 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 prestressing 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 prestressing 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. Prestressing 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 prestressing 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 prestressing steel to be installed in one unit with a length of prestressing steel left projecting to be threaded into another unit during erection, all of the prestressing 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 prestressing steel is required, a corrosion inhibitor that prevents rust or other results of corrosion shall be applied directly to the prestressing steel. The corrosion inhibitor shall have no deleterious effect on the prestressing steel or grout or bonding of the prestressing 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. Coring of Existing Diaphragms.

In preparation for coring holes into the existing pier diaphragms and abutment diaphragms the contractor shall located and mark the existing post-tensioning bars in the pier diaphragms and mark both faces of the all diaphragms with the theoretical centerline and diameter of the cores. The cores shall be in accordance to the dimensions shown on the Plans. No coring shall be allowed before the Engineer has reviewed and approved all proposed cores.

D. Placement of Thread-Bar Ducts.

The thread-bar 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 thread-bar ducts shall be rigidly supported by ties to reinforcing steel at a maximum spacing of 2 feet.

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. The final thread-bar tendon configurations shall be approved by the Engineer prior to casting the deviators.

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

E. Placement of Steel Pipes.

Bent steel pipes shall be installed in the deviators as shown in the Plans, to facilitate the changes in tendon direction. The Contractor shall verify that installed steel pipes in the Pier Deviators and the Bottom Slab Deviators allow for smooth tendon paths as detailed in the Plans without angle breaks or “hard points”.

The steel pipes at the Pier Deviators shall be firmly wedged into their proper position in preparation for pressure grouting the annular space between the pier diaphragm and steel pipe. The Contractor shall demonstrate to the satisfaction of the Engineer that the steel pipes have been installed with the below stated tolerances before and after the pressure grouting operation takes place.

The steel pipes at the Bottom Slab Deviators shall be firmly tied into their proper position in preparation for casting the Bottom Slab Deviators. The Contractor shall demonstrate to the satisfaction of the Engineer that the steel pipes have been installed with the below stated tolerances before and after casting the deviators.

F. Placement of Diabolos and Formed Voids.

The Diabolos and Formed Voids shown in the Plans shall be made of a material suitable for encasement in the deviator concrete and easy removal after initial concrete cure.

The Contractor shall demonstrate to the satisfaction of the Engineer that the Diabolos and Formed Voids have been installed such that no kinks or “hard points” are created along the tendon path and that the final tendon geometry is within the below stated tolerances.

G. Placement of Tendon Ducts.

All tendon ducts 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 locations indicated in “Installation of Grout Inlets and Outlets”. 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. After installation, the ends of ducts shall at all times be sealed to prevent entry of water and debris.

The smooth ducts for the external draped tendons shall be pushed through the steel pipes and the voids created by the diabolos after the deviator has been cast and cured. Duct splices shall be located in the free lengths between deviators.

H. 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 verified under provisions of Article 9.21.7.3, AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002; and by testing as specified herein shall be approved by both the engineer of record and the anchorage device supplier.

All anchorage assemblies shall be provided with vent pipes or other suitable connections at each end for the injection of grout after post-tensioning.

The anchorages for the external draped tendons shall be connected to the smooth tendon duct, the required grout vents installed and be properly aligned within the 12 inch diameter steel pipe shown on the Plans prior to grouting the void between the 12 inch diameter steel pipe and the anchorage hardware.

I. Tolerances.

The tolerance on the installed location of the steel pipes and tendons ducts shall be ¼ inch from the desired position at any point.

Anchorages shall be located within ¼ inch of desired position in all directions except that minimum cover requirements to ends of cut off tendons and anchor components must be maintained.

Position anchorage confinement reinforcement in the form of spirals, multiple U-shaped or closed bars or links, to start within ½ inch of the back of the main anchor plate, providing the anchorage is to be encased or sealed later in the construction, and properly center around the duct.

The entrance and exit angles of tendon paths at anchorages, the end of the bent steel pipe and/or at faces of concrete shall be within ±1 degree of desired angle measured in any direction.

Angle changes at external draped duct joints shall not be greater than ±0.5 degrees in any direction.

J. Installation of Grout Inlets and Outlets.

Place grout inlets and outlets at locations as shown on the plans and shop drawings. Equip all grout inlets and outlets with positive shut-off devices. At a minimum, grout inlets and outlets will be placed in the following positions:

a. Top of the tendon anchorage

b. Top of the permanent grout cap

c. Top of duct on both sides of the Pier Deviator for the external draped tendons

d. Top of duct within 1 foot of the abutment diaphragm

e. Bottom of duct within 1 foot of the Bottom Slab Deviators for deviating external draped tendons located on side of deviator facing midspan (free draining)

f. Top of duct near each tendon damper assembly

g. At major changes in the cross section of the duct, such as couplers and anchorages

h. Bottom of duct at all tendon low points (free draining)

i. At other locations required by the Engineer

Extend grout tubes a sufficient distance out of the concrete member to allow for proper closing of the valves.

K. Preparation of Ducts.

The operation of each vent shall be tested by blowing dry, oil-free air into the duct system and opening and closing each vent in turn.

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 prestressing steel and the inside surfaces of the duct.

L. Placement of Prestressing Steel.

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

All prestressing 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 prestressing 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.

M. Protection of Steel after Installation.

Prestressing steel installed in members prior to placing and curing of the concrete, or installed in the duct but not grouted within 15 days, 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 prestressing steel shall be so protected until grouted or encased in concrete. Prestressing steel installed and tensioned in members after placing and curing of the concrete and grouted within 15 days 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.

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

In all cases, tendons and ducts shall be thoroughly blown dry with oil-free compressed air immediately prior to sealing or capping of the anchorages. In addition, all grout ports and vents shall remain plugged, sealed or otherwise capped, and all duct connections shall be sealed.

N. Post-tensioning Operations.

Concrete Strength.

Post-tensioning shall only be applied when the concrete has attained the required compressive strength as determined from test cylinders cured under the same conditions as the structural concrete.

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 hydraulic jacks so that the force of the prestressing steel shall not be less than the value shown on the approved shop drawings.

Permanent force and permanent stress will be considered as the force and stress remaining in the prestressing steel after all losses, including creep and shrinkage of concrete, elastic shortening of concrete, relaxation of steel, thermal affect, losses in post-tensioned prestressing steel due to sequence of stressing friction and take-up of anchorages, and all other losses peculiar to the method or system of prestressing have taken place or have been provided for in an approve stressing plan.

When friction must 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.

Stressing Jacks.

Each jack used to stress tendons shall be equipped with a pressure gauge having an accurate reading dial at least 6 inch in diameter for determining the jack pressure. The pressure gauge must 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 an independent 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 units of measure, shall be furnished to the Inspector for each jack and gauge unit.

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, including repairing the seals or changing the length of the hydraulic lines, 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.

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. 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 strands shall then be marked and elongations recorded at 20 percent increments of the final jacking force. The elongation in the tendon shall be measured before and after release of the jack in order to determine the actual anchor set. The wedge seating/strand slip at the non-stressing end of the tendon shall be recorded.

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 long or 7 percent in tendons of 50 feet 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 prestressing force in the event of an apparent force deficiency in tendons over 50 feet 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.

The anchor force for all permanent post-tensioning bars with lengths less than 20 feet shall be verified with a lift-off after initial stressing operations. The resulting lift-off shall be within 5% of the expected final anchor force as specified in the Plans.

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. Previously tensioned strands shall not be allowed unless approved by the Engineer.

Prestressing steel shall be cut using an abrasive saw within ¾ inch away from the anchoring device. Flame cutting of prestressing steel is not allowed.

A record of the following post-tensioning operations shall be kept for each tendon installed:

a. Project name, number

b. Contractor and/or subcontractor

c. Tendon location, size and type

d. Date tendon was first installed in ducts

e. Coil/reel number for strands or wires and heat number for bars and wire

f. Assumed and actual cross-sectional area

g. Assumed and actual modulus of elasticity

h. Date stressed

i. Jack and gauge numbers per end of tendon

j. Required jacking force

k. Gage pressures

l. Elongations

m. Anchor sets

n. Stressing sequence

o. Stressing mode

p. Witnesses to stressing operation (Contractor and Inspector)

q. Date grouted, days from stressing to grouting, grouting pressure applied, and injection end

r. Record of any other relevant information

Protection of Tendons.

Within 4 hours after stressing and prior to grouting, tendons shall be protected against corrosion or harmful effects of debris by temporarily plugging or sealing all openings and vents; cleaning rust and other debris from all metal surfaces that will be covered by the grout cap; and placing the grout cap, including a seal, over a wedge plate until the tendon is grouted.

O. Grouting of Tendons.

General.

After post-tensioning and anchoring of a tendon has been completed and accepted, the annular space between the prestressing steel and the duct shall be grouted in accordance with these Special Provisions. In the interval between the post-tensioning and grouting operations, the prestressing 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.

At least six weeks before grouting commences, the Contractor shall submit to the Engineer for review and approval a "Grouting Operation Plan". Written approval of the plan is required before grouting occurs. Any adjustments to the plan as a result of trials or mock-ups shall be incorporated. Grouting operations shall be under the supervision of an ASBI Certified Grouting Technician with a minimum of 3 years experience in grouting of tendons, as described below and as acceptable to the Engineer.

The Grouting Operation Plan shall address the following:

a. Names of grouting crew and Supervisor

b. Experience of crewmembers and Supervisor

c. Training to be provided or undertaken prior to operations

d. Type of equipment to be used, including capacity in relation to demand

e. Working condition of equipment, back-up and spare parts

f. Types, brands and certifications of materials

g. Identity of independent testing laboratory for certification of materials

h. General grouting procedure

i. Duct pressure test and repair procedures

j. Production of grout fluidity, on-site flow testing, adjustments and controls

k. Estimate of grout required per tendon or group of tendons

l. Method of controlling rate of flow and filling of ducts

m. Locations, types and sizes of inlet and outlet vents

n. Means of sealing and protecting tendons and ducts prior to grouting

o. Grout mixing and pumping procedures

p. Tendon or groups of tendons to be grouted in one operation

q. Direction of grouting and sequence of using inlets and closing vents

r. Procedures for handling blockages, including flushing of ducts

s. Procedures for possible post grouting repairs

t. Procedure for controlling w/c ratio, and for ensuring that the water used is acceptable

u. Contractor's QC forms that are to be signed daily by Grout Supervisor

Equipment.

The grouting equipment shall include a high-speed shear colloidal 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. 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 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 0.125 inches 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 0.1875 inches 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 must 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.

During grouting operations provide a stand-by grout mixer and pump.

Provide vacuum grouting equipment at the job site, concurrently with all pressure grouting operations, consisting of the following:

v. Volumeter for the measurement of void volume.

w. Vacuum pump with a minimum capacity of 10 cfm and equipped with flow-meter capable of measuring amount of grout being injected.

x. Manual colloidal mixers and/or dissolvers (manual high speed shear mixers), for voids less than 5 gallons in volume.

y. Standard colloidal mixers, for voids 5 gallons and greater in volume.

Duct Pressure Test

After stressing of the tendon, an air pressure test shall be performed on each complete duct system.

The air pressure test shall involve pressurizing the complete duct system to 25 psig with dry, oil-free air, and monitoring the pressure in the system for a period of 5 minutes. If the pressure loss during this 5-minute period exceeds 10%, all sources of leakage shall be identified, and measures shall be taken to reduce or eliminate the identified leaks, such that upon repeating the pressure test, the pressure loss is limited to less than 10% in 5 minutes.

Mixing Grout.

Water shall be added to the mixer first, followed by the cement grout.

Grout shall be mixed in accordance with the Manufacturer's instructions using a colloidal mixer to obtain homogeneous mixture. A fluidity test shall be performed on the mixed grout prior to beginning the injection process. Target flow rates as a function of mixer type used and ambient temperatures shall be obtained from the grout Manufacturer. The grouting process shall not be started until the proper grout properties have been obtained.

The grout shall be mixed until a uniformly blended mixture is obtained and shall be continuously agitated until it is introduced into the grout 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.

During grouting operations the fluidity of the grout must be strictly maintained within the limits established by the grout manufacturer. A target fluidity rate will be established by the manufacturer's representative, based on ambient weather conditions. Perform fluidity test for each tendon to be grouted and maintain the correct water to cementitious ratio. Do not use grout which tests outside the allowable flow rates.

Prior to grouting empty ducts condition the grout materials as required to limit the grout temperature at the inlet end of the grout hose to 90°F. Prior to performing repair grouting

operations, condition the grout materials to limit the grout temperature at the inlet end of the grout hose to 85°F. Check the temperature of the grout at the inlet end of the grout hose hourly.

At the beginning of each day's grouting operation, perform a wick induced bleed test. If zero bleed is not achieved at the end of the required time period, do not begin grouting of any new or additional tendons until the grouting operations have been adjusted and further testing shows the grout meets the specified requirements.

Placing Grout.

Grouting shall start at the lowest injection port with all vent holes open. A continuous one-way flow of grout shall be maintained at all times.

The maximum rate of grout injection shall be 16 ft per minute for vertical ducts and 50 ft per minute for horizontal ducts.

Grout shall be pumped through the duct and flow continuously at the first vent hole after the injection port until no visible slugs or other evidence of air or water are ejected and the grout being ejected has the same consistency as the grout being injected. At this time, at least one gallon of grout for bars and tendon sizes 7-0.6” and smaller and 3 gallons of grout for tendon sizes 9-0.6” and larger shall be vented from the first vent hole into a suitable receptacle and discarded properly. The first vent valve shall then be closed. Grout injection shall continue until all vents have been closed one after another in the direction of flow following the same process. At intermediate crests where vents have been provided both at the crest and immediately downstream from the crest, the vent downstream of the crest shall be closed before the associated crest vent.

The pumping pressure at the bar or tendon inlet shall not exceed 145 psi. Normal operations shall be performed at approximately 75 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. The water pump shall be available on-site for this purpose as part of the standard flushing equipment. The flushing pressure shall not exceed the grouting pressures listed herein.

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.

Temperature Considerations.

Grouting shall not occur when air temperatures are below 40°. 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 40°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. Grout temperature shall not fall below 45°F.

Under hot weather conditions, grouting shall take place early in the morning when daily temperatures are lowest. The grout temperature shall not be above 90°F during mixing or pumping. If necessary, the mixing water and grout shall be cooled.

Post-Grouting Operations and Injection.

Do not remove or open inlets and outlets until the grout has cured for 24 to 48 hours. Perform inspections within one hour after the removal of the inlet/outlet. After the grout has cured, remove all outlets located at anchorages and high points along the tendon to facilitate inspection. Drill and inspect all high points along the tendon as well as the inlets or outlets located at the anchorages. Depending on the geometry of the grout inlets, drilling may be required to penetrate to the inner surface of the trumpet or duct. Use drilling equipment that will automatically shut-off when steel is encountered. Unless grout caps are determined to have voids by sounding, do not drill into the cap. Perform inspections in the presence of the Engineer using endoscopes or probes. Within four hours of completion of the inspections, fill all duct and anchorage voids using the volumetric measuring vacuum grouting process.

Seal and repair all anchorage and inlet/outlet voids that are produced by drilling for inspection purposes with an approved epoxy grout. Use an injection tube to extend to the bottom of the drilled holes for backfilling with epoxy.

For vent ports on external tendons, saddles, vent hoses and all other hardware shall be removed and the holes in the ducts shall be sealed using a heat shrink repair sleeve. The heat shrink repair sleeve shall extend a minimum of six inches beyond the vent opening in the duct in both directions. All heat shrink repair materials and procedures shall be approved by the Engineer prior to use.

If tendon grouting operations were prematurely terminated prior to completely filling the tendon, drill into the duct and explore the voided areas with an endoscope. Probing is not allowed. Determine the location and extent of all voided areas. Install grout inlets as needed and fill the voids using volumetric measuring vacuum grouting equipment.

All miscellaneous material (tie wire, duct tape, etc.) used for sealing grout inlet or vent connections shall be removed prior to carrying out further work to protect end anchorages. End anchorage protection shall be installed as described herein.

Provide a grouting report signed by the Contractor and/or the Subcontractor within 72 hours of each grouting operation for review by the Engineer. Report the theoretical quantity of grout anticipated as compared to the actual quantity of grout used to fill the duct. Notify the Engineer immediately of shortages or overages. Information to be noted in the records must include but not necessarily be limited to the following: identification of the tendon; date grouted; number of days from tendon installation to grouting; type of grout; injection end and applied grouting pressure, ratio of actual to theoretical grout quantity; summary of any problems encountered and corrective action taken.

P. Protection of Prestress Anchorages.

General.

All anchorages shall be protected by multi level protection system as described below. For the external draped tendon anchorages the system shall consist of grout cap and elastomeric coating system. For the thread-bar anchorages the system shall consist of grout cap, one coat of epoxy bonding compound and approved epoxy grout or reinforced secondary concrete pour (Bottom Slab Deviators, external to existing box girder).

Grout Cap.

A permanent, non-corroding grout cap shall be used to cover all anchorages. The permanent grout cap shall completely encapsulate the anchorage wedge plate, and shall attach directly to the anchor plate. A suitable gasket shall be used to prevent moisture intrusion behind the grout cap. Any bolts or fixtures used to secure the permanent grout cap to the anchorage shall have a minimum cover of 1” and shall be of stainless steel or other rust-free material as approved by the Engineer. The permanent grout cap shall remain in place at all times following grouting of the tendon.

Elastomeric Coating System.

The anchorages of the external draped tendons shall be protected with an elastomeric polyurethane waterproof coating system (prime and subsequent coats) with a thickness of 30 to 45 mils. The limits of the coating system are as shown on the Plans. The components of the coating system must be supplied by a single manufacturer and sold as a waterproof coating system. The surface preparation and application of the coating system must be applied in strict accordance with the manufacturer’s specifications. The Contractor shall provide the Engineer with a written certification from the manufacturer that the product meets the requirements stated herein. The manufacturer must have quality control standards conforming to ISO 9000 Standards.

The elastomeric coating system is composed of several coats. The use of an epoxy prime coat is dependent upon the requirements of the manufacturer’s waterproofing system. The polyurethane chemistry may be either waterborne aromatic (moisture-curing) or aromatic (moisture-sensitive). The cured coating system shall meet the following requirements:

Property	Test Value	Test Method
Hardness	Shore A Between 60 and 90	ASTM D 2240
Tensile Strength	> 750 psi	ASTM D 412
Elongation	> 400 %	ASTM D 412
Tear Strength	> 70 pli	ASTM C 957
Abrasion Resistance H-18 wheels 1000 gm/wheel	< 350 mg loss / 1000 revs.	ASTM C 940
Crack Bridging 1000 Cycles	System Passes	ASTM C 957
Elongation Recovery	> 94%	ASTM C 957

Assure concrete, grout caps or other substrates are structurally sound, clean and dry. Concrete must be a minimum of 28 days old. Remove all laitance, grease, curing compounds, surface treatments, coatings and oils by grit blasting or water blasting using a minimum 10,000 psi nozzle pressure to establish the anchor pattern. Blow the surface with compressed air to remove the dust or water.

Construct a 2 ft x 4 ft concrete test area with a similar surface texture to the surfaces to be coated and coat a vertical face with the elastomeric coating system chosen. Determine the number of coats required to achieve a coating thickness between 30 to 45 mils without runs and drips. Mix and apply elastomeric coating as per manufacturer's current standard technical specifications. Spray or roller application is permitted (spray application preferred). Have the coating manufacturer representative on site to supervise and comment on the application of the elastomeric coating onto the test block. Apply coatings using approved and experienced personnel with a minimum of three years experience applying similar polyurethane systems. Submit the credentials of these persons to the Engineer for review and consideration for approval.

Thread-bar Anchorage Protection.

Prior to filling of thread bar anchorage block-outs or casting the secondary pour back for the Bottom Slab Deviator (external to existing box girder), all exposed end anchorages, strands, grout caps, block-out reinforcement and other metal or non-metal accessories or components shall be cleaned of rust, misplaced mortar, grout and other such materials.

Immediately following cleaning operations, the entire surface of the anchorage recess or area to be covered by the epoxy grout or concrete (all metal and concrete) shall be thoroughly dried and uniformly coated with an epoxy bonding compound meeting the requirements of AASHTO Specification M-235, Class III. The epoxy shall be applied in a manner and thickness as recommended by the manufacturer.

Immediately following application of the epoxy-bonding compound, tight fitting forms shall be installed to encase the entire anchorage system, including reinforcement ties or anchors, where applicable. The anchorage block-out shall be completely filled with an approved epoxy grout. The concrete or epoxy grout shall be placed within the time limits

specified by the epoxy bonding compound manufacturer. The epoxy grout shall exhibit no shrinkage, and shall contain no aluminum powder, iron particles, chlorides, sulfites, fluorides or nitrates.

Method of Measurement

The post-tensioning system will not be measured for payment.

Basis of Payment

The contract lump sum for FURNISHING AND INSTALLING POST-TENSIONING SYSTEM shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing, placing and tensioning the prestressing steel in concrete structures, complete in place, as specified in the contract documents and in these Special Provisions and as directed by the Engineer.

Payment shall also include anchorage assemblies and post-tensioning system hardware, external ducts, steel pipe used in deviators as well as for anchorage assemblies, coring of the existing concrete diaphragms, grout and grouting, all testing, anchorage protection systems and all labor, materials, tools, equipment and incidentals necessary for completing the work in accordance with these Special Provisions and the Plans.

This payment shall also include lubricants in the tendon ducts for friction control and flushing the lubricant and/or corrosion inhibitor from the tendon ducts after stressing and prior to grouting. No separate measurement and payment will be made for anchorage components, local anchorage zone reinforcement supplied as an integral part of a proprietary anchorage system, nor ducts for similar post-tensioning system hardware.

Payment shall also include all on-site quality control, testing and records of tendon installation, stressing and grouting operations.

All temporary prestressing material and labor will not be measured separately for payment and the cost shall be included with the bid price for permanent prestressing.

RELOCATE EXISTING ELECTRICAL SYSTEM

Description. This work shall consist of relocating the existing electrical system, currently located inside the northbound and southbound superstructure, as detailed in the plans, described herein and in accordance to the applicable provisions of Section 800 of the Standard Specifications, and as directed by the Engineer. The existing electrical system shall be relocated within the box to allow space for the repairs and strengthening details shown in the plans and described elsewhere in the specifications.

Construction Requirements.

The contractor shall provide all necessary conduit hangers, and equipment supports or hangers, including all structural steel members and shapes, standard road, nuts, bolts, concrete inserts,

expansion shells, pipe brackets, tubing and conduit clamps, as indicated herein or as required to support and/or suspend all conduit.

Conduit on walls or ceilings shall be supported, at a minimum of every five feet, with galvanized malleable iron clamps, utilizing anchors as specified herein.

The contractor shall secure fasten conduits to each support with conduit straps. Conduit supports shall be manufactured by B-Line, OZ/Gedney, Unistrut Corporation or approved equal. Supports shall be held to the walls by electro-galvanized steel inserts as manufactured by B-Line, Ramset, Unistrut Corporation or approved equal.

The use of explosive force, hammer actuated, booster assits, piston drive or like devices is strictly prohibited.

The use of perforated strap hangers, plastic or composition inserts is not acceptable.

Where threaded fasteners are provided, either a jam nut or aerobic thread sealant shall be used.

Method of Measurement. Relocation of the existing electrical system will not be measured for payment.

Basis of Payment. This work will be paid for at the lump sum price for RELOCATE EXISTING ELECTRICAL SYSTEM, which price shall be payment in full for all labor, equipment and materials necessary to complete the work as specified herein.

SCREEN WALL CONNECTION REPAIR

Description. This work shall consist of furnishing all labor, tools, equipment, and materials required to repair the screen wall connections as detailed in the plans, described herein and in accordance to the applicable provisions of Sections 503, 505, and 508 of the Standard Specifications, and as directed by the Engineer. Drilling and grouting anchor rods shall be in accordance with Section 584 of the Standard Specifications. Material specification for anchor rods shall be in accordance with Section 1006.09 of the Standard Specifications. The existing steel connections shall have all loose rust, loose mill scale, and other loose foreign material removed from the surface prior to casting the concrete blocks.

Screen Wall Connection Repair shall be performed at all connections between the screen walls and the abutments and curtain walls. The existing connections between the screen walls shall remain in place.

At the Southbound Bridge, North Abutment, the top of the east and west screen walls are rotated approximately 6” and 3”, respectively, away from the abutment segment. Contractor shall reposition the screen walls at these locations to their original positions.

At the Southbound Bridge, North Abutment, the screen walls at the west end shall be shored during the repair of the concrete spall in the abutment stem.

Existing sealants around the screen walls shall be removed and replaced in kind with a silicone sealant suitable for concrete structures and approved for prolonged exterior exposure without losing flexibility of adhesion.

Cut and grind wire lifting loops in screen walls to be flush with the face of the concrete.

Reinforcement bars shall be epoxy coated.

Method of Measurement. Repairing the screen wall connections will not be measured for payment.

Basis of Payment. This work will be paid for at the lump sum price for SCREEN WALL CONNECTION REPAIR, which price shall be payment in full for all labor, equipment and materials necessary to complete the work as specified herein.

FIXED ANTI-ICING SPRAY TECHNOLOGY (FAST) SYSTEM

Description.

A. General

The anti-icing system shall be a fixed automated system that provides automatic spray treatment of the traffic lanes and other targeted areas to minimize or eliminate ice formation on the driving road surface. The Contractor shall have the option of choosing either a disk spray system or a micro spray system. In either case, the anti-icing system shall dispense a liquid anti-icing agent by pumping the chemical through a series of controlled valves to nozzles mounted in the roadway and bridge deck. Upon actuation, a Remote Processing Unit (RPU) controller shall open valves in an automated sequence to spray the anti-icing liquid over the targeted area. The anti-icing cycle shall be initiated automatically, requiring no human activation, based on information provided by active and passive sensors mounted in the bridge deck, and atmospheric sensors. The anti-icing cycle shall be capable of initiation by remote telephone call using data or voice transmission, or by manual activation from the system's pump house. The system shall dispense varying quantities of liquid anti-icing agent in variable spray sequences depending on road surface conditions at the site, for example, black ice, hail, snow and freezing rain.

The anti-icing agent shall flow through either a pressurized one-way system or a closed loop piping system, in either case designed to supply fully-pressurized liquid to all operational spray nozzles. The complete anti-icing system shall be a fully-integrated system, with individual components designed, manufactured, and tested to operate specifically as part of the anti-icing spray system. The FAST system shall use an active road weather information system (RWIS) to monitor and trigger automatic operation based on the freezing point of the road surface. The Contractor may re-use all or portions of the existing RWIS equipment in the Kishwaukee Bridge, or may furnish and install a completely new RWIS, depending on Equipment Supplier design requirements. In either case, the system shall utilize a proven design, and shall not be a prototype.

The system shall be connected via a communications link to a control computer located at the IDOT District II facility in Dixon, from which IDOT shall have remote control of operation and monitoring. The FAST system shall also be accessible from three additional remote sites via phone communications.

The system shall have power back-up to provide reliable operation through a local power failure on a short term basis.

In the following detailed requirements, the Contractor is the company or companies performing the physical installation of the FAST system. The Equipment Supplier is the company providing the majority of the FAST hardware and software, based on established designs used on other FAST site installations in North America. The Equipment Supplier also shall guide the Contractor in installation details, system integration, testing and system maintenance. The Contractor and the Equipment Supplier shall jointly develop the detailed design of the FAST system. This Contractor and Equipment Supplier shall also provide a five year Warranty, during which they shall be responsible for both routine and performance-based maintenance.

B. Contractor and Equipment Supplier Qualifications

The Contractor shall have experience in the installation of electrical systems for roadways and bridges. The Equipment Supplier shall have at least five years of experience in the provision of FAST systems, and shall have supplied at least ten fully-functioning systems based on active pavement sensor technology. The work shall be performed in close cooperation with the Equipment Supplier's designated representative, who shall be knowledgeable in the design, installation and operation of similar FAST systems. The designated representative shall have at least two years of related experience in this work. The Contractor's personnel and equipment shall have the capacity to undertake the work, and shall be capable of completing the work within the specified contract time.

In the Bid Submittal, the Contractor shall provide documentation of qualifications, experience record, prior project references, and the availability of the personnel. All prior project references shall be currently available personnel who can verify the quality of the Contractor's previous work, and shall include name, address, and telephone number. This documentation shall reference the experience of the Contractor in the installation of electrical systems for roadways or bridges. The Contractor shall provide similar information on the Equipment Supplier, including documentation of field operations for programmable system controller software and hardware by agencies using the Equipment Supplier's FAST products; plus the name, address, and telephone number of references from at least five installed sites.

Submittals

A. Construction Kick-Off Meeting

At least 14 days prior to the construction kick-off meeting, the Contractor shall submit the following:

Experience and reference documentation stated in the above section.

Conceptual design and installation drawings for a fully functional FAST system.

Conceptual Communications Infrastructure Plan showing routing of electronic communications between devices in the field, between devices and computers, between systems, and between the field computers/systems and remote users.

Checklist of major items to be covered in the system integration test, at a minimum including: RWIS and pavement sensor operation, RPU controller operation, software system monitoring/control and deck spray coverage.

A bullet outline of items to be included in training sessions.

B. 60 Days Prior to FAST Construction Initiation

At least 60 days prior to the initiation of FAST system construction, the Contractor shall submit the following:

a. Detailed design and installation working drawings for the complete anti-icing spray system with sufficient detail to allow review of all power and communications for compliance with the Specifications. Working drawings shall clearly indicate any and all deviations from the contract documents. The working drawings shall include specific details and exact locations of all system components including proprietary equipment.

b. Compliance Traceability Matrix for all components including computer and electronic device hardware and software that give evidence of the compliance of each component or function with the requirements in these specifications and the Equipment Supplier's specifications.

c. Communications Infrastructure Plan showing routing of electronic communications between devices in the field, between devices and computers, between systems, and between the field computers/systems and remote users (with phone line links shown conceptually).

d. Installation schedule that shall outline the steps the Contractor intends to make to complete the contract in cooperation with other site work. The installation schedule shall be revised and resubmitted if there is a significant change to the schedule.

e. Structural engineering design calculations and shop drawings for the pump house building prepared and sealed by a Professional Engineer registered in Illinois.

f. Electrical engineering design calculations and shop drawings for the system prepared and sealed by a Professional Engineer registered in Illinois.

g. Mechanical engineering design calculations and shop drawings for the system prepared and sealed by a Professional Engineer registered in Illinois.

h. Working drawings and product data for doors, louvers, frames and all accessories and hardware for the pump house.

i. Design calculations and working drawings for the pump house stair framing, if present, that have been prepared and sealed by a Professional Engineer registered in Illinois.

j. Working drawings for RWIS mounting pole and foundation. If the existing RWIS is used, as-builts with any modifications shall be provided. It should be noted that there are no existing as-built plans, so that the Contractor will need to prepare such plans if the existing RWIS is re-used.

k. Product data sheets and certificates of conformance with the Specifications, and Quality Assurance reports for the following system components:

a. Spray disks if used.
b. Micro spray nozzles if used.
c. Pavement sensors.
d. Chemical pressure piping.
e. Conduit for chemical pressure piping, including expansion fittings.
f. Valve and valve controller.
g. Pressurized accumulator tanks, if provided.
h. System control cable.
i. Sensor control cable.
j. Conduit for sensor control cable and RPU slave unit power cable.
k. Anti-icing chemical.
l. Anti-icing chemical storage tanks.
m. Flush water storage tank.
n. Pump and motor.
o. RPU spray system controller.
p. RWIS RPU and all meteorological sensors.
q. Power back-up.
r. Acrylic resin or sealant for waterproofing of concrete surfaces.
s. Deformed steel reinforcing bars, epoxy-coated, if used in pump houses.
t. 7-wire steel post-tensioning strand for precast building, if provided.
u. Silicone sealant and bond breaking tape for building joints, if used.
v. Floor grating for building, if used.
w. Removable handrail for building, if provided.
x. Padlock and gates to control access to the pump house driveway.

l. Detailed Test and Implementation Plan. Testing shall demonstrate the full range of functions that the anti-icing system is intended to provide per the following organization.

Testing shall include two steps leading to 1) Provisional System Acceptance and 2) Final System Acceptance. Provisional System Acceptance shall occur following completion of physical installation, software implementation, and communications link completion. At that time, which is scheduled to be completed in warm weather conditions, system operation shall be demonstrated by manually activating deck spraying of water to assure essential physical performance and coverage. The range of operational modes and spray sequences shall also be demonstrated.

The second testing step shall consist of three months of full system operation, commencing on November 1 of the first year of the Performance Period. During this

three month time, the Contractor shall provide monthly performance reports generated by the FAST software that tracks weather and surface conditions plus FAST system activations, and demonstrates that the FAST system operates as intended in these Special Provisions. Included shall be availability reports on the FAST system. Upon completion to the satisfaction of the Engineer, IDOT District II will sign off on Final System Acceptance.

See Section U. Construction Time and Work Initiation, for review and approval requirements.

Materials and Construction Requirements

A. General

FAST systems operate in a mostly uncontrolled natural environment; some components are subject to long term chemical corrosion, heavy traffic, and high pressure. The choice of material and workmanship shall meet the highest qualities to achieve a durable product. All system components and installation designs must be in accordance with local, state and national codes.

B. Pump House

The primary purpose of the pump house is to provide a safe enclosure for a large number of instruments, electronic controllers, storage tanks and the pump. A prefabricated building system shall be field-erected on a cast-in-place concrete foundation. The location of the building is identified on the plans but the Contractor shall obtain approval from the Engineer before the installation of the foundation. Installation of the electrical components within the pump house shall conform to the requirements of the National Electric Code, dated 2005.

The pump house building shall be designed in accordance with the International Building Code (IBC), 2002, for Use Group “U”. Structural Design Loads shall be: roof live load = 0.4 psi; floor live load = 1.74 psi; wind load = 90 mph; seismic performance category “A”, exposure group I, with $A_v = 0.04$.

Walls and roof of the pump house shall be insulated to a rating of R-8 or higher. The pump house building shall have adequate ventilation to prevent buildup of toxic or flammable gases and adequate heating to prevent freezing of piping or clear water storage. The doors shall be of heavy duty industrial grade construction. Paper honeycomb core materials are not permitted. Doorplates shall be 0.12 inch thick resin reinforced with hand-laid glass fiber mat, and molded in one continuous piece. Door edges shall consist of at least three layers of glass fiber reinforced resin with a nominal thickness of 0.4 inch. Doors shall have an insulation value of R-11. The floor of the pump house shall be perfectly level and constructed to support the weight of the filled storage tanks.

The Contractor shall submit structural engineering design calculations and working drawings for the prefabricated building for pump house that have been prepared and sealed by a Professional Engineer registered in Illinois. The design calculations and working drawings shall be submitted for review and approval in accordance with the local Specifications.

The contractor shall be responsible for foundation investigation and foundation design of the pump house. An Illinois registered Professional Engineer shall approve the foundation investigation and design.

The design shall include a padlock and gates to control access to the service driveway to the pump house as shown on the plans. The padlock and gates shall be rated for continuous outdoor use. The Contractor shall supply 3 sets of keys for the padlock.

C. Pump and Motor

The pump shall be of appropriate size to assure proper operation of the anti-icing system. Pump and housing shall be AISI Type 316 (ASTM A 240) stainless steel with seals and bearings appropriate for exposure to chloride-based chemicals, potassium acetate, calcium magnesium acetate or CMA, CMA with potassium or CMAK, and other anti-icing chemicals in common use in the United States. Electric motor shall be single-phase,110 volt or 220 volt, 60 Hz, appropriate for use in corrosive environments. The pump shall be capable of refilling the piping line and resuming working pressure level within 20 seconds of spray actuation.

D. Storage Tanks

The storage tank for anti-icing chemical shall be 2,000-gallon minimum capacity. The tank shall be rated for a minimum fluid specific gravity of 1.5 and shall be made from an approved polymer or glass fiber-reinforced epoxy material. Any metal components of the tank shall be AISI Type 316 (ASTM A 240) stainless steel. Galvanized steel shall not be permitted.

The storage tank for the flush water shall be 500-gallon minimum capacity cylindrical tank in a vertical configuration. The tank shall be rated for a minimum fluid specific gravity of 1.5 and shall be made from an approved polymer or glass fiber-reinforced epoxy material. Any metal components of the tank shall be AISI Type 316 (ASTM A 240) stainless steel. Galvanized steel shall not be permitted.

Both storage tanks shall be located within the pump house. The tanks shall be constructed for long life (minimum 30 years).

E. Ventilation

A ventilator fan shall be provided as required inside the pump house per Equipment Supplier specifications. The ventilator fan shall consist of an electric motor driven propeller fan. The fan motor shall be suitable for variable speed operation, and the propeller fan shall be provided with a wire guard located on the motor side. The propeller fan shall meet structural design code and shall be fabricated from durable non-corrosive materials.

F. Hydraulic System

The hydraulic system delivers anti-icing chemical from the pump house to each valve and nozzle. All components shall be compatible with chloride-based chemicals, potassium acetate (KA), calcium magnesium acetate (CMA), CMA with potassium (CMAK) anti-icing

chemicals, and other anti-icing chemicals in common use in the United States. The Contractor may elect to use either a one-way or closed loop hydraulic system for this project. If the Contractor chooses the one-way hydraulic system, the valve activation time between adjacent nozzles shall not be greater than 2 seconds. The Contractor shall also demonstrate accurate, reliable and responsive pressure and flow control for the one-way distribution system.

If the Contractor chooses a spray disk system with a closed loop hydraulic system, it shall be supplied with stainless steel accumulator tanks. In this case, pressurized accumulator tanks shall be provided to store the anti-icing chemical and to provide consistent pressurization to the chemical throughout the system during the spray sequence. A minimum of one accumulator tank shall be provided for every four spray disks. Each accumulator tank shall be sized for a minimum liquid capacity of 1.5 quarts. Stainless steel manual shut-off valves shall be provided at each accumulator tank location.

G. Valve Units

Valve units control the flow of chemical to each spray disk or micro spray nozzle. The system shall use solenoid activated valves. These units shall consist of electromagnetically-controlled solenoid valves, stainless steel manual isolation valves and electronic solenoid control cards. Each control card shall have the capability to independently control the operation of either one or two solenoid valves, per the Equipment Supplier's design. A single multi-conductor cable that is daisy chained shall control a minimum of 32 control cards. The number of cables shall be determined by the number and location of valve units. See plans for typical location of components within a NEMA 4x box.

The control cards shall allow each solenoid valve to be remotely activated using different spray sequence programs from the RPU controller. Each control card shall be addressable via a signal frequency allowing individual control from the RPU. The control cards shall have remote fault testing capability.

H. Nozzle Assemblies

The Contractor shall have the option of choosing either a disk spray system or a micro spray system for the FAST system.

1. Spray Disk Option

The spray disks shall be mounted in the bridge deck or roadway surface, with the disk top surface recessed 1/8 inch to 1/4 inch from the top of pavement or as recommended by the manufacturer, and shall be capable of withstanding high-volume interstate traffic and snow plowing procedures conducted with maintenance trucks. The total depth of recess in the bridge deck to accommodate the spray disk shall not exceed 2-1/8 inches, and the diameter of the recess inset shall not exceed 12 inches. The height of the liquid stream from the nozzle shall not exceed 16 inches above the traveled lane when applying the liquid. The spray disks shall be made of a durable material that remains stable under exposure to sunlight, weather, and traffic. If not stainless steel, the material shall be comparable in stiffness and rigidity to stainless steel. All metallic components of the spray disk shall be AISI Type 316 (ASTM A 240) stainless steel. The spray disks mounted in the bridge deck

shall have piping connections located on the underside of the disk. The spray disks shall be fabricated in such a manner that the nozzle spray directions can be adjusted while the disk is embedded in the bridge deck or roadway surface without removal of the disk assembly. The spray disks shall be capable of spraying a pattern to effectively distribute the anti-icing chemical.

The spray disks must be placed as shown on the plans and be capable of two traffic lane coverage. The nozzles shall be self-cleaning. The nozzles shall be removable for cleaning or replacement without the need to remove the entire nozzle assembly.

The spray disk and nozzle design must have a minimum five years record of successful performance on highway anti-icing systems.

2. Micro Spray Nozzle Option

The micro spray strips shall be mounted in the bridge deck or roadway surface, with the top surface even with, or slightly recessed from, the top of pavement or as recommended by the manufacturer, and shall be capable of withstanding high-volume interstate traffic and snow plowing procedures conducted with maintenance trucks. The spray strips and nozzles shall be saw cut into the finished bituminous surface, fixed to the bridge deck or roadway surface by using specially designed mounting templates and bonded to the pavement using an approved sealing compound. The micro spray nozzles shall be self contained in a series of thermoplastic spray blocks no more than 5 in. long by 1.2 in. wide by 1.7 in. deep. The spray nozzles shall be spaced at approximately 16.5 ft. intervals and shall include two orifices of sufficient size and variable relative orientation to provide a full range of spray patterns. The height of the liquid stream from the nozzle shall not exceed 10 inches above the traveled lane when applying the liquid in low wind (< 10 mph) conditions. The micro spray nozzles and housing blocks shall be made of a durable material that remains stable under exposure to sunlight, weather, and traffic. If not stainless steel, the material shall be comparable in stiffness and rigidity to stainless steel. All metallic components of the micro spray nozzle shall be AISI Type 316 (ASTM A 240) stainless steel.

The nozzles shall have a non-return valve to prevent penetration of dirt or other particles present on the road surface. The spray blocks shall be fabricated out of a high strength material such as black acetal copolymer plastic. The spray blocks shall remain stable under exposure to sunlight, weather, traffic and continuous exposure to anti-icing chemicals.

The spray strips and nozzles shall be placed as shown on the plans and be capable of two traffic lane coverage. The nozzles shall be self-cleaning. The nozzles shall be adjustable in direction without the need to remove the entire spray block.

The spray strip, spray block and nozzle design must have a minimum two years record of successful performance on highway anti-icing systems.

I. Pressure Pipe/Tubing

Outside of the pump house, the chemical pressure pipe/tubing shall be either Polyamide 11 (also known as Nylon 11), or high pressure rubber tubing, per Equipment Supplier's requirements. Polyamide 11 tube couplings shall not be permitted in tubing runs between junction chambers, or in remote, inaccessible locations. Rubber tubing shall be ¾" (I.D.)

synthetic rubber (Nitrite or Buna-N) with synthetic yarn braid reinforcement, a working pressure of 250 psi (minimum), and a working temperature range of -40°F to 190°F. The tubing shall be for use with push-on fittings and come in continuous length runs of 500 feet (minimum). All pipe connections, joints, elbows, fixed points, and pipe clamps shall be AISI Type 316 (ASTM A 240) stainless steel.

Within the pump station, chemical pressure pipe shall either be beta polypropylene rigid pipe with socket-fused joints rated for the system pressure, or Polyamide 11, per Equipment Supplier's requirements.

Chemical pressure piping shall be routed within a protective conduit system consisting of galvanized rigid steel conduit, 2 inches in size or less. The system shall be designed to mitigate any problems due to water hammer. All valves and valve enclosures shall be labeled to match the piping schematic and operation table.

J. Nozzle Assembly Location and Chemical Feed Line

The project bridge is a pre-stressed concrete box girder structure. The anti-icing agent feeder lines and associated components such as valves and junction boxes shall be installed as shown on the plans. Location within the box girder will allow added protection for the lines, reduced installation cost and disruption to traffic, and easy access for maintenance. Epoxy sealant shall be used around all pipes and spray disk components that penetrate the deck slab, to minimize the risk of leaks.

Specific requirements on different portions of the bridge structure and approaches shall be as follows (see plan details):

1. Box Girder.
   The longitudinal feed lines shall be located within the box girder. All deck penetration vertical feed lines through the deck shall be centered (±1/2") between criss-crossing deck tendons both laterally and longitudinally. The tendons are 1-1/4" diameter ferrous bars grouted within 2" ducts. The spacing between the longitudinal tendons at the centerline of the box girder deck where deck penetrations are to be placed is approximately 22 inches. The spacing between lateral tendons on the bridge decks are variable, but generally on the order of 2 feet. **The Contractor must exercise utmost care in locating these tendons.** The Contractor shall use a non-invasive detection technique to field locate the tendons, mark the feed line drill locations and obtain the Engineer's approval before drilling the deck or coring any hole. Feed line vertical holes shall be no greater than 1/8-inch larger than the outside diameter of the feed line.

2. Approach Spans.
   Nozzle assemblies and feed lines on the four approach spans to the two box girders require special treatment because of the unavailability of box girder. Feed lines for these shall run longitudinally within the median and outside the approach span concrete slab, then shall feed the nozzle assemblies via transverse surface feed lines.

   a. Spray Disk Option
   For the spray disk design, the Contractor shall first saw cut the existing bituminous wearing surface with two pioneer cuts, three inches apart, at a depth of 3-1/2 inches.

Then the gap shall be water blasted to a depth of 7-1/2 inches, creating a trench for the surface feed lines. This operation will encounter longitudinal surface reinforcing bars that must not be cut or damaged. The feed line conduit then shall be placed underneath the longitudinal surface reinforcing bars to reach the nozzle assembly. The spray nozzle shall then be located, the deck shall be drilled down to the feed line conduit, and the pressure tubing shall be connected to the spray nozzle. The feed line conduit shall then be grouted in place, and the spray nozzle shall be placed and sealed.

b. Micro Spray Option

For the micro spray option, the Contractor shall saw cut the asphaltic surface course to a maximum width of 0.75 inch and 1.7 inch depth. The feed line shall be placed within this slot and secured in place with asphaltic sealer.

3. Approach Roadways.

Nozzle assemblies on the approach roadways shall be installed as shown on the plans. The feed lines shall run longitudinally within the median and along the inside shoulder, and feed the nozzles via transverse feed lines.

K. Sensor Units

Pavement sensors shall be of solid-state design and constructed of materials that have thermal characteristics similar to the pavement materials into which they are installed. They shall be in located by the Equipment Supplier based on site conditions for maximum effectiveness of the system, and shall be mounted with an epoxy sealer. The sensors shall be recessed 1/8 inch to 1/4 inch from the top of pavement or as recommended by the manufacturer. The total depth of recess in the bridge deck to accommodate the sensor shall not exceed 2-1/8 inches The sensors shall be capable of withstanding high-volume interstate traffic and snow plowing procedures conducted with maintenance trucks.

Sensor control cable and power cable for the RWIS RPU shall be routed within a protective conduit system consisting of galvanized rigid steel conduit. If at all possible, the sensor wire to the deck surface shall share one of the deck penetrations for spray nozzle feed line. If not possible, the required deck penetration shall be located per the requirements of subsection J.-1. above.

L. Electric Control and Power Lines

The electric control and power lines and junction boxes shall be installed adjacent to the anti-icing agent feeder lines that they parallel, as shown on the plans. The control line shall be located within the conduit for chemical pressure tubing. The power line, if low voltage, may be located within this same conduit. If the control line is high voltage (110-120 volt), it shall be located within the relocated electrical service conduit shown on the plans. The relocation conduit is covered elsewhere in these specifications.

M. System Monitoring

The system monitoring and alert capabilities at a minimum shall include the following capabilities:

Tank Level.

The system shall continuously monitor the liquid level in storage tanks and provide actual tank level information and alerts when the tank level is low. When the tank is empty, automatic system shutdown shall be triggered.

Pipe Line Pressure.

The system shall continuously monitor the pressure inside the hydraulic distribution system and provide actual pressure information and alerts when the pressure is too high or too low, relative to system performance and the rated limits of the pipe lines.

Flow Monitoring.

The system shall continuously monitor the quantity of chemical flowing through the system and be able to measure the quantity of chemical sprayed. Flow rate range shall be sufficient to cover the full range of software programs providing automatic spray activation sequences.

Ultrasonic Level Sensor.

Ultrasonic device to detect the level of chemical in the storage tanks. The ultrasonic level sensor shall be connected to an alarm, horn-mounted on the exterior of the pump house, to alert personnel filling the tanks when the tanks are full. The ultrasonic level sensor shall also send signals to a digital level display in the housing for the chemical fill tube, located on the exterior of the pump house.

Leak Monitoring.

The system shall be able to detect leaking using information collected by its pressure sensors and flow meters. A detection of leaking shall trigger an automatic system shutdown and an alert.

N. Electrical Service and Battery Back-Up

1. Electrical Service.
   A 240 VAC, 100 Amp, 60 Hz, single phase electrical service shall be installed by the contractor to a breaker box inside the pump house. Installation of electrical components shall be in accordance with the requirements specified in the National Electric Code, dated 2005. The contractor shall provide electrical power from the nearest available source as approved by the Engineer. The contractor shall be responsible for coordinating with the local electrical utility in order to make all electrical connections between the electrical source and the pump house. The cost of utility runs shall not be paid for separately and is incidental to this work. Communication and control of valve openings may be accomplished using either AC or DC voltage.

2. Power Back-Up.
   A power back-up subsystem shall be included to keep the FAST system operational during periods of local power loss for a minimum of twelve (12) hours, with ambient air temperatures down to – 5 F.

O. Field Controllers and Communication

The Contractor has the option of using one or two RPUs for the control of RWIS operations and the spray control mechanism. In the event of choosing two RPUs, the connection between the two RPUs shall be a digital communication link.

The anti-icing system shall be controlled by a microprocessor-based RPU controller with the ability to monitor pump functions, system pressure and flow characteristics, and tank fluid levels. The RPU spray system controller shall be able to interpret between various signals from sensors to initiate different spray programs to apply measured amounts of liquid anti-icing chemical to the roadway surface. The control of the application of anti-icing chemical shall be fully automated, with provisions for operator intervention and notification. This RPU shall be located within the pump house.

The automated control system shall include atmospheric sensor capabilities and active and passive pavement sensor technology. The RPU spray system controller shall be capable of storing and running a minimum of sixteen (16) different software programs for automatic spray activation sequences, in response to ambient conditions of frost, freezing rain, hail, black ice and snow. The controller and software shall have the capability to vary the length of time each valve is opened, thus varying the quantity of liquid anti-icing agent that is applied to the roadway surface. The controller shall be capable of changing the length of time for pauses between sprays, according to different conditions on the roadway surface.

The system shall have manual override capability, with the options for manual pushbutton operation from the pump house or local wireless programmable device, and remote operation via secure communications with a password using Windows-based PC software. The system shall provide surge protection for the incoming communications lines. The RPU shall have the capability of detecting failures of system components and initiating automatic system shutdown in the event of a major fault or failure. The RPU spray system controller shall be contained within a waterproof housing with lockable lid.

At least one program shall handle system actuation during warm weather months using flush water to maintain a clean and functional system. Such cleansing operation shall be at a frequency recommended by the Equipment Supplier and shall be configured to occur during low traffic volume periods and with minimum disruption to drivers. The goal shall be to conduct this operation when rain is falling, subject to the need to occur at the recommended frequency.

Currently there is a DSL connection to the bridge for structure health monitoring that connects to the IDOT District II facility in Dixon. The down link speed is 1 mbps and the uplink speed is 384 kbps. This connection is sufficient for supporting both the bridge health monitoring and FAST/RWIS operations. A local area network shall be established for connecting all RPUs. The FAST system shall be configured and designed to use the DSL for remote communications, monitoring and control. In the event of a communications breakdown between the field and the IDOT District II facility, the FAST system shall continue operating independently. In that case, the FAST system shall store records of field conditions and spray events locally, for eventual transmission to the IDOT District II facility when communications are restored.

The system shall have the capability for local on-site connection of a lap top computer to the RPU spray controller and RWIS RPU using the RS-232C serial interface protocol.

The RWIS communications protocol shall be compliant with the National Transportation for Communications ITS Protocol (NTCIP), specifically the following.

NTCIP 2301 – Simple Transportation Management Framework (STMF) Conformance Level 2.
NTCIP 2001 – Class B profile.
NTCIP 1201 – Global Object Definitions.
NTCIP 1204 – Object Definitions for Environmental Sensor Stations (ESS).
NTCIP 2104 – Ethernet Subnetwork Profile.

P. System Central Computer

The system shall be supplied with a desk top computer from a major manufacturer capable of effectively running the supplied client software for remote operation of the anti-icing system. The desk top computer shall have minimum specification of a Pentium 4 3.0 GHz processor, 2MB Cache, Windows XP SP2, 512MB RAM , 80GB SATA II 7200RPM hard disk, Integrated Video, Intel GMA950 w/DVI adapter card, 48X32 CDRW/DVD Combo, Integrated AC97 Audio, Integrated Ethernet card, a wireless modem card, 3-Year Next Day On-site Warranty. Included shall be a 19-inch LCD flat panel monitor, keyboard and mouse. The computer and specifications shall be approved by the Engineer prior to delivery.

Q. Spray Activation Methods

The FAST system shall require no manual intervention for normal and routine operation. FAST system shall at the minimum provide the following activation methods:

Automatically, based on detected and predicted weather and road surface conditions and programmed spray activation logic (as described above).

Manually via a graphical user interface from a remote control site.

Manually using an activation button inside the pump house, or using a wireless programmable device similar to a garage door opener. The wireless device shall be able to be set to a desired frequency chosen by IDOT District II, and shall be strong enough to start the anti-icing system from 1,000 feet away from the pump house.

R. Road Weather Information System (RWIS)

An SSI (Surface Systems, Inc.) RWIS has been in operation on the project bridge for about eight years (see plans). This system includes a set of subsurface sensors on each bridge approach, a set of passive surface sensors in the bridge deck near each bridge approach, and a suite of atmospheric sensors and an RWIS RPU located toward the north end of the bridge. A phone line to the bridge is currently used for remote communication. For this project, active surface sensors will be deployed.

1. Active Pavement Sensors.

The active pavement sensors shall be capable of continually measuring the Freeze Point Temperature of the moisture/chemical mixture on the roadway surface. This sensor shall be

capable of accurately detecting Freeze Point Temperature in the range of -4°F to 32°F using an electronic Peltier device. The pavement sensor shall provide the following information:

a. Pavement Surface Temperature Range: -40°F to 185°F.

b. Pavement Surface Temperature Accuracy: ± 0.5°F.

c. Presence of wet surface condition.

d. Presence of moisture on pavement.

e. Presence of frost or ice on pavement.

f. Presence of anti-icing chemical.

g. Freeze Point Temperature of moisture considering concentration of anti-icing chemical, measured directly in degrees °F by an active sensor, and estimated in degrees °F by a passive sensor. Freeze Point Temperature range shall be -4°F to 32°F.

h. Presence of snow, ice, sleet, or wet surface when pavement surface temperature is below 32°F.

2. RWIS Operational Details

The RWIS system and associated RPUs shall allow for total flexibility in the selection of meteorological sensors and the system adaptability. The system shall include the integration of active and passive pavement sensors. Pavement and atmospheric sensors shall provide the following detection:

a. Comparison of active and passive pavement sensors utilizing the advantages of each.

b. Detection of accurate freeze point temperature on the pavement which does not require re-calibration with each chemical used.

c. Ability to operate with multiple chemicals, for example when exposed to various combinations of truck-applied chemicals.

d. Provision of system activation at different thresholds before freezing, for example, 1, 2, or 3 degrees before freezing.

e. The system provided shall allow for software logic programs that utilize the capabilities of the RWIS remote processor to properly interface with the anti-icing spray system controller. The system provided shall have user-settable thresholds for adjusting automatic operation of the system as follows:

(1) System activation when Freeze Point Temperature sensors detect that pavement surface moisture is near freezing via user settable thresholds.

(2) System activation when chemical dilution is occurring via user settable thresholds.
(3) System activation and accurate Freeze Point Temperature measurements even when multiple chemicals are used via user settable thresholds.
(4) Accurate system activation without calibration of pavement sensors, with changing chemicals.
(5) Immediate system activation when falling snow or freezing precipitation is detected and surface temperatures is below user settable threshold.
(6) The ability to include other weather parameters in the system logic.

3. Atmospheric Station

The tower-mounted environmental sensing station shall include, at a minimum:

a. Air Temperature/Relative Humidity Sensors. The station shall include an air temperature sensing element that operates over the temperature range of - 40°F to 176°F, with temperature sensing accuracy throughout the range of ± 0.37° F. The station shall also include a relative humidity (RH) sensing element that operates over a range of 0 to 100 percent, with an accuracy within 3 percent in the range from 0 percent to 95 percent RH, and within 5 percent in the range from 95 percent to 100 percent RH. Sensors shall have a wind and solar radiation shielded housing and shall be mounted approximately six feet above ground level.

b. Precipitation Sensor. This sensor shall detect the rate and type of precipitation by sensing falling particles, and shall be capable of distinguishing between rain, freezing rain, hail, and snow. The sensor shall be capable of detecting minimum precipitation particle sizes of .02 inch diameter. Operating temperature range shall be -58°F to 158°F. The sensor shall be mounted approximately six feet above ground level.

c. Wind Speed/Direction Sensor. This sensor shall have an operating range of 0 to 100 mph. The sensor survival operation limit shall be 180 mph with an operating azimuth of 360°mechanical and 355° electrical. The temperature operating range shall be -40°F to 140°F. The sensor shall be installed at the standard meteorological height of approximately 30 feet above ground level, at the top of a tower.

The Contractor shall determine whether the existing SSI RWIS can be utilized in the new FAST system, or whether all or portions of it need to be replaced. The lump sum price shall reflect the proposed design.

S. Software System

1. General.

In addition to basic operations needs for system monitoring, diagnosis and control, the software shall also provide security. At a minimum, data encryption, user authentication, and user authorization shall be provided. Additionally, the software system shall allow operations from multiple locations. Primary control of the FAST system shall rest with IDOT District II facility in Dixon. The FAST system shall also be accessible from three

additional remote sites via phone communication. System software shall allow IDOT to establish a hierarchy of control from the various remote control sites. The system shall permit a minimum of two simultaneous users.

2. Detection and Remediation.

   The system shall detect problems and compensate for these problems and notify the user of the problems by the following methods:

   a. Self-Check. The system shall detect chemical leakage and restrictions within the entire spray system.
   b. Remediation. The system shall provide a single push button reset of normal functions upon completed system repairs or inspections. The system shall automatically detect system defects and take action without operator intervention to prevent or minimize system damage or environmental damage.
   c. User Notification. The system shall automatically notify system users at remote control sites of detected problems, including location of abnormalities and actions taken. The notification system shall include user-definable and configurable alarms and notifications.

3. Inventory Tracking and Control.

   The system shall automatically provide tracking of material used in FAST operation. The system shall detect and report liquid levels in the tanks throughout the range from full tank to empty tank. The status of the tank levels shall be reported to the user using the communications system. The system also shall have alarms for low level - refilling required, and low level - not sufficient chemical to operate the system. The system shall provide an alarm to the operator and an automatic shut-off to prevent system damage. All alarm levels shall be settable by system user.

4. Other.

   The system shall include the following operating capabilities:

   a. Automatic system tests on a preprogrammed and/or timed basis. The system shall measure system pressure and quantity of liquid flow and prevent system operation if parameters exist outside of acceptable operating conditions.
   b. The system shall be capable of going through a system evaluation before activating the spraying operation. This system evaluation shall check for system leaks, low chemical reservoir levels, and other major system defects and shall not activate the system if any of these conditions exist. During system activation, the system shall evaluate if individual spray valves do not operate and shall document in the system log and alert the operator of these conditions.

T. Anti-icing Agent

The Contractor shall supply and stock potassium acetate (KA) as the anti-icing agent for this project. The anti-icing agent storage tank shall be filled at the start of the first operational

system, then regularly replenished by the Contractor throughout the Warranty Period to assure an adequate supply, with no FAST system down time due to agent shortage.

U. Construction Time and Work Initiation

The FAST system shall be installed in cooperation with other Contractor activities and scheduled accordingly.

The Contractor shall not start construction or installation of any part of the anti-icing system until the complete design and installation documents detailed in Submittals, Section C. 60 Days Prior to FAST Construction Initiation, have been reviewed and approved, and written approval to begin construction has been issued by the Engineer. Such approval shall not relieve the Contractor of responsibility for results obtained by the use of these designs and drawings or any of the Contractor's other responsibilities under the contract.

V. Operations and Maintenance

1. General.

It is the Contractor's responsibility to ensure that all the components installed as a part of this project function together, requiring minimal human intervention and maintenance. The system shall function automatically most of the time, and operation status shall be accessed by authorized staff remotely.

The Contractor or Equipment Supplier shall be responsible for FAST system maintenance, including annual commissioning/decommissioning, for the entire five year Warranty Period, as detailed in the FAST SYSTEM MAINTENANCE AND WARRANTY Special Provision.

b. Operations and Maintenance Manual

The Contractor shall furnish an Operations and Maintenance Manual (O&M Manual) for the anti-icing system. The O&M Manual shall include detailed operation and maintenance instructions for all systems and items of equipment provided under the contract. The O&M Manual shall be in the form of neatly formatted bound ring binders and electronic format in the form of CD-ROM disks.

Prior to completion of the work, and at least 90 days prior to final payment for installing the system, the Contractor shall furnish for the Engineer's review four O&M Manual draft printed copies. At least 30 day prior to final payment, the Contractor shall furnish for the Engineer's use ten printed copies of the final O&M Manual, plus an electronic copy. The electronic copy shall consist of a Microsoft Word document of key project data, plus source application or scanned pages of data sheets, brochures and other O&M Manual contents. The Engineer shall approve the final O&M Manual before Final System Acceptance of the work.

The O&M Manual shall consist of product data sheets, brochures, bulletins, charts, schedules, approved working drawings corrected to as-built conditions, assembly drawings, wiring diagrams, operation and maintenance information for equipment, and

other information necessary for the Department's use of the system. Oversized sheets and working drawings larger than 8.5 inches by 11 inches shall be neatly folded to that size with title block exposed along one edge, and bound or placed in pockets within the O &M Manual.

The O&M Manual shall include:

a. Title page giving the name and location of the facility, bridge plan numbers, and Project Numbers.
b. Performance curves for all pumps and equipment.
c. Approved working drawings of each component.
d. Approved product data sheets and dimensioned drawings of each piece of equipment, and details of all replacement parts.
e. Manufacturer's installation, operation, and maintenance instructions for each piece of equipment and complete listing of nameplate data.
f. Complete wiring diagrams of all individual pieces of equipment and systems including one-line diagrams, schematic or elementary diagrams, and interconnection diagrams.
g. Complete piping and interconnection drawings with labeling.
h. Complete parts list with parts assembly drawing, preferably by exploded view, with names and addresses of spare parts suppliers, recommended list of spare parts to be kept on hand by IDOT District II, and sample order forms for ordering spare parts. Lead time required for ordering spare parts shall be estimated.
i. Instructions with easily understood schematics or diagrams for disassembling and assembling the equipment for overhaul or repair.

Delivery of an O&M Manual satisfactory to the Engineer is an essential part of project delivery. Incomplete or inadequate manuals will be returned to the Contractor for correction and resubmission.

W. Integration, Testing and System Acceptance

The Contractor and Equipment Supplier shall integrate and test the installed FAST system, per the approved Test and Implementation Plan, in two steps covering Provisional System Acceptance and Final System Acceptance The Engineer shall be notified at least 5 business days in advance of system testing for which his or her presence is required..

Method of Measurement

The FAST system will not be measured for payment.

Basis of Payment

Payment for the installation of the FAST system will be made at the contract lump sum price for FURNISHING AND INSTALLING ANTI-ICING SYSTEM, which payment shall constitute full compensation for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work specified herein to provide a functional FAST system. This item includes payment for system integration and testing. Payment for the item shall be on the following basis:

25% of lump sum upon delivery of system design drawings;
35% of lump sum upon delivery of system components (excluding construction materials);
20% of lump sum upon Provisional System Acceptance.
20% of lump sum upon Final System Acceptance.

FIXED ANTI-ICING SPRAY TECHNOLOGY (FAST) SYSTEM MAINTENANCE AND WARRANTY

Description. This work consists of providing routine and emergency maintenance, plus a warranty for the fixed anti-icing spray technology (FAST) system under the following pay item: ANTI-ICING SYSTEM MAINTENANCE AND WARRANTY – 5 YEAR.

The Contractor shall unconditionally warrant to the Illinois Department of Transportation (IDOT) that all work completed under the above contract pay item, including all materials and workmanship furnished by the Contractor and subcontractors, shall comply with the contract, and that the FAST system be free of defects, as hereinafter defined for a period of five (5) years after the Performance Period Start Date.

The work associated with the above stated pay item shall be accomplished according to all contract documents for the FAST system. Acceptance by the Engineer, of any portion of the work during the original contract for the FAST system, will not relieve the Contractor of the requirements of these Special Provisions.

The Contractor guarantees that after receipt of notice from the Department as provided herein, he/she shall perform the maintenance and warranty work specified in the notice in accordance with the original specifications including all necessary incidental work to complete the work and restore the complete facility. The Contractor shall also guarantee to repair all damage to adjoining pavement caused by failure of the warranted work, including but not limited to removal, engineering, material procurement, reinstallation, or replacement all at the Contractor's cost and expense. The Department's remedies under this warranty are not exclusive but are in addition to any other remedies provided by this contract or law. The additional obligations undertaken by the Contractor to provide this express warranty and to perform maintenance in accordance herewith shall be secured by a performance and payment bond provided by the Contractor in a form furnished by the Department (attached), and said bond to remain in full force and effect for the duration of the Performance Period.

Definitions.

Conflict Resolution Team (CRT). A three-member team responsible for resolving disputes between the Department and the Contractor regarding any claims of non-compliance of the maintenance and warranty requirements.

Final System Acceptance. Final inspection and approval of the FAST system following three months of satisfactory operation in the first winter of the Performance Period.

Performance Bond. A bond that guarantees the FAST system installed under the contract, against defects in materials and/or workmanship, which may develop after the Performance Period Start Date for the specified Performance Period and guarantees

performance of Routine Maintenance as defined herein. The Performance Bond shall be in force continuously, from the date of the Performance Period Start Date, until release from the Performance Bond.

Performance Period. A five (5) year duration initiating on the Performance Period Start Date.

Performance Period Start Date. The date that IDOT District II signs off on Provisional System Acceptance will constitute the start date for the Performance Period for the project.

Provisional System Acceptance. Inspection and provisional approval of the FAST system after physical installation, software integration and completion of communications links. Scheduled to be completed in warm weather conditions, and consisting of manual activation and demonstration of FAST system features using water spray.

Routine Maintenance. Annual scheduled maintenance of the FAST system, including commissioning/ decommissioning of the system every season for the duration of the Performance Period. Before a winter season starts, a system commissioning process shall be performed. This process includes inspection, cleaning, and repair of damaged or worn system components, plus test activation of the system with water. After the commissioning, the hydraulic distribution system shall be filled with anti-icing agent and made ready for use. The water tank shall then be drained.

At the end of each winter season, the system shall go through a decommissioning process. The primary purpose is to retrieve all anti-icing chemical from the hydraulic distribution system and flush the system. The water tank shall then be filled with water.

In addition, Routine Maintenance shall include any performance or condition checks of the system throughout the winter season recommended by the Equipment Supplier, or covered in the Operations and Maintenance Manual (O&M Manual).

Routine maintenance shall also include the issuance of update or correction pages of the O&M Manual throughout the Performance Period, in both hard copy and electronic format.

Training. During the five year Performance Period, the Contractor or Equipment Supplier shall train IDOT personnel in the commissioning/decommissioning process as well as operational and maintenance features of the system. Concurrent with or after FAST Provisional System Acceptance, the Contractor or Equipment Supplier shall train IDOT personnel in software control of the system and the method of filling tanks throughout a winter season. This shall consist of a 1-day training class at a time mutually agreed to IDOT District II and the Contractor. The Contractor shall also answer telephone support questions from IDOT throughout the five year Performance Period at no additional cost, up to a maximum of 30 hours per year.

At a time mutually agreed to IDOT District II and the Contractor during the Performance Period, the Contractor or Equipment Supplier shall conduct a 1-day training class of IDOT personnel in Routine Maintenance as defined herein.

Warranted Distress. The FAST system will be considered distressed if installed features or performance do not meet the criteria stated in Warranty Requirements (below) during the Performance Period.

Warranty Work. Corrective action taken to bring the Warranted Distress into compliance for release of the Performance Bond.

Winter Period. The annual time period from November 1 through April 15, inclusive.

Commencement of Performance Period. At the inspection for Provisional System Acceptance, the Engineer and Contractor shall review the FAST system for compliance with the contract per the Test and Implementation Plan, including any written documentation from the Contractor required by the contract. The Engineer shall document and execute Provisional System Acceptance on a form furnished by the Department when the FAST system is determined by the Engineer to be in compliance with the Contract. This date is then the Performance Period Start Date.

Acceptance by the Engineer of work that used material from deficient lots, or otherwise accepted per Article 105.03, will not relieve the Contractor of meeting the FAST system requirements.

Performance Bond. The Contractor shall furnish the Department a performance and payment bond with good and sufficient sureties in the full amount equal to 30 percent of the as-bid total for the FURNISHING AND INSTALLING ANTI-ICING SYSTEM pay item in this contract, as the penal sum. The surety shall be acceptable to the Department, shall waive notice of any changes and extensions of time, and shall submit its bond on the form furnished by the Department. The bond will ensure completion of required Warranty Work, including payments for all labor, equipment, materials, and traffic control used to remediate any Warranted Distress. The bond will also ensure completion of Routine Maintenance as defined herein.

At the end of the five year Performance Period and remedy of any distress occurring within the Performance Period, the Contractor will be released, in writing, from further Warranty Work and Routine Maintenance, provided all previous Warranty Work and Routine Maintenance has been completed and approved by the Engineer.

Warranty Requirements. During the Performance Period, the Contractor may monitor the FAST system via a software link. Following Provisional System Acceptance, the Contractor or Equipment Supplier shall respond to trouble calls by beginning remote diagnosis within 24 hours of notification by IDOT District II. If on-site maintenance or repair activities are required, the Contractor or Equipment Supplier shall be on-site within 3 days (72 hours) of notification. Failed parts within this Performance Period shall be repaired or replaced to the satisfaction of IDOT at no cost for parts and labor.

Failure of the FAST system consisting of less than 60% of normal spray volume along more than 100 ft. of linear bridge length per deck, or loss of RPU control over more than 100 ft. of

linear bridge length per deck, shall require immediate attention. A failed length shall be measured from a non-functioning nozzle in the direction of travel flow to the next functioning nozzle. The 100 ft. failure length need not be contiguous, i.e., it shall be measurable in non-adjacent segments that in sum exceed 100 ft. The Contractor shall then develop an action plan to restore acceptable operations within seven (7) days. IDOT District II will review and approve the action plan. Loss of service of less than 100 ft. in length per deck during the Winter Period shall be repaired by the following May 1 at the latest, for which a written action plan shall also be provided to IDOT District II for review and approval.

The system shall be available for use 95% of the time during the Winter Period exclusive of down time due to power failure or other external, uncontrollable cause. Availability shall be logged automatically by system software and reported on a calendar month basis. Failure to meet this availability requirement shall prompt the Contractor to prepare an action plan as just defined for the failure of more than 100 ft. of linear bridge length, for resolution within a targeted seven (7) day period.

In all cases, the Department and the Contractor may agree upon a start date and a reasonable period of performance to complete repairs.

The Department will notify the Contractor of the need for Warranty Work in writing or by e-mail., and the Contractor shall act within the prescribed time limits above to complete appropriate repairs If the Contractor disputes the need for the Department's request for Warranty Work, the work shall be completed, and the Contractor has up to 30 days to provide written notification of the dispute or additional claim to the Department. In that case, if the Contractor and the Department are not able to resolve the matter between them, either party may seek resolution of the dispute by the Conflict Resolution Team (CRT). The Department will provide final notification to the Contractor within 14 days of receipt of the CRT's final judgment.

If the Contractor fails to promptly complete the warranty work specified in the notice or as specified by the CRT, or otherwise breaches its obligations under this provision, the Department may declare the Contractor to be in default, and may proceed to terminate the rights of the Contractor and to cause the completion of the work in the manner approved in Article 108.10 of the Standard Specifications. The Contractor agrees to indemnify and hold harmless the Department on account of default, including but not limited to the cost and expense of any future Warranty Work required.

The Contractor shall repair all distressed areas, identified by the Engineer, according to the original FAST system specifications. The Engineer shall be allowed full inspection of all operations and provided safe access to the areas being repaired.

Prior to proceeding with any repair work, the Contractor shall obtain a permit from the Department. A Traffic Control Plan shall be submitted and approved by the Department prior to any lane closures for repairs or Routine Maintenance. The Department may restrict the time of work according to the traffic needs surrounding the structure.

Warranty Work by the Contractor shall be approved by the Department and meet the same requirements of the original warranted work specified herein.

If Warranty Work performed by the Contractor necessitates a corrective action to the structure, then such corrective action to those areas shall be the responsibility of the Contractor.

The Department may perform other maintenance during the Performance Period such as bridge washing, painting, repairs to safety appurtenances, etc. Such work shall not relieve the Contractor of their responsibilities as specified herein.

Rights and Responsibilities of the Department.

The Department:

a. Is responsible for notifying the Contractor, in writing or by e-mail, of any required Warranty Work.
b. Reserves the right to approve the date(s) and time(s) requested by the Contractor to perform Warranty Work and Routine Maintenance.
c. Reserves the right to approve all materials and methods used in Warranty Work and Routine Maintenance.
d. Reserves the right to determine if Warranty Work and Routine Maintenance performed by the Contractor meet the contract requirements.
e. Reserves the right to perform, or have performed, other maintenance during the Performance Period. This maintenance will not relieve the Contractor from meeting the warranty requirement of these Special Provisions.
f. Shall document the condition of the FAST system prior to and after any Warranty Work.

Rights and Responsibilities of the Contractor.

The Contractor:

a. Shall unconditionally warrant to the Department that the FAST system shall be free of defects in materials and workmanship as defined by the warranty requirements as set forth above, for a period of five (5) years from the Performance Period Start Date for the project.
b. Shall submit to the Department the Performance Bond, on forms furnished by the Department (attached), prior to the Performance Period Start Date.
c. Is responsible for performing all Warranty Work and Routine Maintenance, including, but not limited to, traffic control, at no additional cost to the Department.
d. Shall retain all records for a period of one year beyond the end of the Performance Period or the completion of any warranted repairs, whichever is later.
e. Is responsible for replacing all temporary repairs, resulting from the FAST system being in non-compliance with the warranty requirements, with Department approved materials and methods.
f. Shall follow all traffic control and work zone safety requirements of the contract when any Warranty Work and Routine Maintenance is performed.
g. Shall complete all Warranty Work and Routine Maintenance in a neat and uniform manner and shall meet the requirements specified in the contract.

h. Is required to supply to the Department original documentation pursuant to Section 107 of the Standard Specifications that all insurance required by the contract is in effect during the period that any Warranty Work or Routine Maintenance is being performed.
i. Shall notify the Department and shall submit a written course of action proposing appropriate corrective measures for needed Warranty Work. Approval by the Department must be obtained prior to the anticipated commencement of any Warranty Work.

Conflict Resolution Team. The sole responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputed matters between the Department and the Contractor regarding the interpretation of non-compliance of the warranty requirements. It is the intention of the parties that the CRT be assembled with the full cooperation of both parties, and that the Contractor and Department will devote their full attention to the prompt consideration of the matter by the CRT. Neither party shall neglect its obligation of good faith hereunder nor shall unreasonable delay be imposed that would hinder the prompt decision of the CRT. The decision of the CRT shall be final and binding on the Contractor and Department.

The CRT will consist of three members:

a. One selected, provided and compensated by the Department.
b. One selected, provided and compensated by the Contractor.
c. One third party, mutually selected by the Department and the Contractor. Compensation for the third party member will be equally shared by the Department and the Contractor.

The team members will be identified in writing at the pre-construction meeting and will be knowledgeable in the terms and conditions of this warranty, as well as the methods used to determine FAST system distress. Changes to the team membership will be made in writing for the Performance Period.

Method of Measurement

FAST system maintenance and warranty will not be measured for payment.

Basis of Payment. Payment for system maintenance and warranty will be made at the contract lump sum price for ANTI-ICING SYSTEM MAINTENANCE AND WARRANTY - 5 YEAR. This item includes annual commissioning and decommissioning of the FAST system by the Contractor or Equipment Supplier throughout the five year Performance Period, other Routine Maintenance and Warranty Work, plus training of IDOT personnel in system operations and maintenance. Payment for the item shall be on the following basis: 100% of the lump sum price at FAST Provisional System Acceptance.

ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUPPLEMENTAL PERFORMANCE BOND
1 OF 2

KNOW ALL MEN BY THESE PRESENTS,

That we _____as principal,

and _____as surety, a corporation duly organized and existing under and by virtue of the laws of the State of

_____ and duly authorized to transact the business of surety in the State of Illinois, are jointly and severally held and bound unto the Illinois Department of

Transportation in the sum of _____ Dollars, for the payment of which we jointly and severally bind ourselves, our heirs and executors, administrators, successors and assigns firmly by these presents.

Whereas, the principal herein has, on the _____ day of _____, 20___, made and entered into a certain agreement with the State of Illinois, by and through the Illinois Department of Transportation, which agreement is more fully described as

_____,

Contract Number 64857, under which agreement the principal agrees to furnish certain materials and to perform certain work which he agrees to do in accordance with the terms, conditions, and requirements as set out in said agreement, and whereas, in connection with said contract, the principal has executed a written Maintenance Agreement and Warranty for the FAST system, a copy of which is attached hereto and by this reference made a part hereof;

And, whereas, the principal has therein undertaken to complete Routine Maintenance as defined in the project Special Provisions and to warrant the FAST system against any defects, as therein defined, for a period of at least five (5) years from the date of Provisional System Acceptance of the project by IDOT District II.

ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUPPLEMENTAL PERFORMANCE BOND
2 OF 2

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH THAT if the principal herein shall faithfully and truly observe and comply with the terms of such Maintenance Agreement and Warranty and shall well and truly perform all matters and things by him/her undertaken to be performed under said document upon the terms proposed therein and shall do all things required of said principal by the laws of this state and shall indemnify and save the harmless the State of Illinois and Illinois Department of Transportation against any direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of said Maintenance Agreement and Warranty by the Contractor or subcontractors, then this obligation is to be void, otherwise to remain in full force and effect.

In no event shall the obligations under this bond be terminated without written consent of Illinois Department of Transportation.

Signed and sealed this _____ day of _____, 20___.

SURETY_____ PRINCIPAL _____

BY _____ BY _____
(Attorney-in-fact) (Official Capacity)

Countersigned:

_____ Attest: _____
(Resident Agent) (Secretary)

ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MAINTENANCE AGREEMENT AND WARRANTY
FIXED ANTI-ICING SPRAY TECHNOLOGY (FAST) SYSTEM
1 OF 2

THIS MAINTENANCE AGREEMENT AND WARRANTY, made by

_____
(Contractor)

of _____ hereinafter called "Warrantor", in favor of the Illinois Department of Transportation, hereinafter called "Department";

WITNESSETH:

RECITALS:

The Department has contracted for the furnishing and installing of a FAST system on the

Kishwaukee River Bridges on the Interstate I-39 (F.A.I. 39) in Winnebago County, Illinois.

Under the provision of Contract No. 64857, pertaining in part to the FAST system, entered into by

_____, and the Department,
(Contractor)

the _____ is required
(Contractor)
to furnish the Department a written commitment for the FAST system to complete Routine Maintenance as defined in the Special Provisions and a Warranty against defects as stated in said contract for a period of five (5) years from the date of Provisional System Acceptance by the

Engineer, of _____'s work under said contract.
(Contractor)

ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MAINTENANCE AGREEMENT AND WARRANTY
FIXED ANTI-ICING SPRAY TECHNOLOGY (FAST) SYSTEM
2 OF 2

NOW, THEREFORE, in consideration of the foregoing, Warrantor hereby agrees and warrants that in every case in which any defect, as described in Contract Number 64857, occurs within said five (5) years period, Warrantor shall, forthwith upon receipt of written notice or e-mail of such defect, repair said defective area. Warrantor further agrees to complete Routine Maintenance on the FAST system for the concurrent five (5) year period.

It is expressly understood and agreed that the warranty and maintenance obligations herein set forth are made and undertaken by warrantor to and for the benefit of the Department.

IN WITNESS WHEREOF, Warrantor have set his/her hands as of this

_____ day of _____, 20____.

_____
(Contractor)

ATTEST: By: _____

_____ Title: _____

SHEET WATERPROOFING MEMBRANE SYSTEM
Effective: March 26, 1997 Revised: February 1, 2007

Description: This work shall consist of all labor, material and equipment necessary to prepare the surface and place a sheet waterproofing membrane system on the bridge deck as shown on the plans and according to manufacturer's specifications.

All full and partial depth deck slab repairs shall be performed prior to the application of the sheet waterproofing membrane. Minimum cure times for the repairs shall be observed. Membrane curing compound shall not be used. Milling of conventional cast-in-place concrete deck surfaces is allowed provided the finished surface is acceptable to the manufacturer's representative for the sheet membrane. Typically the surface shall be free of fins or sharp edges and the peak to valley depth is less than or equal to 3/16 inch (5 mm). Milling of precast concrete deck surfaces is not allowed.

The existing concrete deck shall be shot blasted to remove all dirt, oil, paint and other foreign material. Cleaning of all foreign material remaining on the concrete deck, after the shot blasting operation, shall be accomplished by satisfactory methods. No vehicles or equipment will be permitted on the prepared surfaces after the cleaning operations except those vehicles necessary for the actual placement of the sheet waterproofing membrane.

The supplier of the material shall furnish technical assistance. A representative of the supplier shall be present at the job site at all times during placing the membrane system and during bituminous concrete paving. This representative shall be ultimately responsible for approving the deck surface preparation and the waterproofing membrane system placement.

Materials: The material used in the waterproofing system shall consist of a cold-applied, self-adhering membrane incorporating a heat resistant woven or non-woven polypropylene mesh or fiberglass reinforcement with release film on one side. A thin spun bonded mat on the up side shall allow the membrane to bond to the asphalt concrete overlay yet will permit rubber tired machinery to be driven on it prior to the application of the Hot-Mix Asphalt (HMA) Overlay. A primer, a mastic and a rubberized asphalt sealer shall be applied according to the manufacturer's recommendations.

Sheet Membrane:

The sheet membrane shall have the following physical properties:

Property	Test Method	Value
Thickness of Membrane	Measured by Micrometer	55 mils (1397 microns) Min. 70 mils (1778 microns) Max.
Width of Membrane Minimum		36 inches (914 mm)
Membrane Puncture Resistance, Minimum	ASTM E 154	40 lb. (178 N)
Permeance Maximum	ASTM E 96	0.10 Perms 5.8 ng/m^2sPa
Low Temperature Pliability	ASTM D 146	No. cracks when bent 180° around a 1 inch (25 mm) mandrel at -25 °F (- 32 °C).
Water Absorption Maximum	ASTM D 1228 72 Hours	0.25%

Certification: Prior to approval and use of the material the Contractor shall submit, to the Engineer, a notarized certification by an independent test laboratory stating that the materials conform to the requirements of these specifications. The certification shall include or have attached specific results of tests performed on the material supplied. The Engineer may at his option require samples of any material for testing. Materials may be accepted on certification but are subject to control and/or approval by subsequent testing.

Storage: All components of the system shall be delivered to the job site in the Manufacturer's unopened packaging. All containers delivered to the job site which are found to be opened or damaged shall be removed from the job site immediately.

All components of the system shall be stored according to the Manufacturer's recommendations and in compliance with all relevant health and safety regulations.

Copies of Material Safety Data Sheets (MSDS) for all materials shall be kept on-site for review.

Surface Preparation: Prior to placing the membrane, the deck surface areas must have a remaining textured finish that is free of sharp protrusions that is acceptable to the manufacturer of the sheet waterproof membrane. Unacceptable deck surfaces shall be reworked to the satisfaction of the Manufacturer's Representative. All deck areas shall be shot blast cleaned. The shot blast cleaning shall include the vertical face of the curbs and expansion dams to the height of the specified finish pavement surface and elevation. All dirt, oil, paint, and other foreign materials within the cleaning area shall be sufficiently removed as per the

Manufacturer's recommendations. The Engineer will inspect the concrete deck immediately prior to the application of the primer. Application of either the primer or membrane shall not begin until approval is granted by the Engineer.

Application: Application shall be in strict conformance to the Manufacturer's instructions. The Contractor shall acquaint himself with the materials specified and their handling characteristics. The Contractor shall be thoroughly familiar with the construction procedures recommended by the Manufacturer before application of the system.

The Contractor shall furnish the Engineer a copy of the procedures recommended. A pre-construction conference with a Manufacturer's representative shall be held prior to starting construction to establish procedures for maintaining optimum working conditions and coordination of work related to adjacent construction. A Manufacturer's Representative, familiar with membrane installation procedures, shall be present during placement of the membrane to provide quality assurance that the membrane has been properly installed.

Primer shall be applied uniformly as recommended by the Manufacturer. It may be applied to the surfaces by roller, brush, squeegee or spray. If spraying is used, an approved method of protecting the environment is required. The primer shall be allowed to dry to the manufacture's recommendation before applying the membrane. Primer shall only be applied to an area that will be covered with the membrane within one working day. If the membrane is not placed over the primer within one working day or if the surface of the membrane becomes contaminated, the area shall be reprimed. Metal surfaces shall not be primed. Primer shall be applied to the curb faces to the top of the proposed HMA Overlay. Care shall be taken to insure that all inside corners are coated with primer to a tack free condition.

An appropriate curb treatment shall be used as recommended by the manufacturer. The remainder of the membrane shall then be applied to the deck in a "shingle" fashion starting at the curb edge. The membrane shall be rolled out and positioned on the deck, with the tacky side down. The release film is to be removed from the membrane to allow a bond to the primed deck. The membrane may be applied by hand methods or mechanical applicators. End laps shall be a minimum of 4 inches (100 mm) at the ends of each strip, with edge laps at the factory indicated 2 1/2 inches (63 mm) for the seams. Pressure rolling of the entire membrane surface shall be required to assure firm and uniform contact with the primed surface. Special care shall be used to insure that the membrane is uniformly adhered to the concrete. The entire membrane shall be free of wrinkles, air bubbles, and other placement defects. In the event bubbles or blisters do form under the membrane, they shall be punctured with a sharp pointed instrument such as an awl and the membrane pressed firmly into contact with the deck. All membrane punctures, tears, holes, and misaligned or inadequate seams shall be repaired with a patch of deck membrane sized as required to insure water tightness.

The primer and membrane shall be applied to a wider area than will be paved with asphalt to provide a lap with subsequent application of primer and membrane. Immediately after installation, the inside corners of curbs shall be covered by using a rubberized sealer extending up the curb face to the top of the proposed HMA Overlay and covering the terminating edge of the membrane applied to the deck. All other terminating edges must be sealed immediately after installation. Other than the curbs, the Contractor has the option to seal remaining edges with a rubberized sealer or membrane and a bead of mastic to protect it from surface contamination and damage. A bulk gun shall be used to apply the bead of mastic.

Overlaying the Membrane with HMA: All exposed membrane shall be covered with the proposed HMA mix within five days after installation. The construction of the HMA overlay shall stay a minimum of 1 foot (300 mm) away from the terminating edge of the membrane. After installation of the membrane and prior to placing the HMA, the construction traffic on the membrane shall be restricted in volume and limited to rubber tired vehicles and equipment only. No track driven asphalt pavers will be allowed. All damage to the membrane caused by the Contractors operations shall be repaired immediately, to the satisfaction of the Engineer, and at the Contractors expense. The membrane application Contractor shall have a minimum of one employee present during all HMA paving operations to assure that all necessary repairs are accomplished. The minimum temperature of the asphalt overlay material on the deck shall be 290 °F (144 °C) and the maximum temperature shall not exceed 340 °F (171 °C) or as recommended by the manufacturer of the sheet waterproofing membrane.

Method of Measurement: The Sheet Waterproofing Membrane System will be measured in square yard (square meter) of a horizontal surface area of deck finished and in place. Measurement will be based on the horizontal distance between the face of curbs and the horizontal length of the membrane installed.

Basis of Payments: The Sheet Waterproofing Membrane System will be paid for at the contract unit price per square yard (square meter) for SHEET WATERPROOFING MEMBRANE SYSTEM which price will be payment in full for completing the work according to these specifications. The price bid for this item includes all labor, material, equipment, testing and technical assistant required to complete this work. HMA overlay and deck slab repairs will not be included in this item but will be paid for elsewhere.

HOT-MIX ASPHALT SURFACE REMOVAL COMPLETE
Effective: Dec. 8, 1993 Revised: March 20, 2007

Description: This item shall consist of furnishing all labor and equipment for the complete removal and satisfactory disposal of the existing hot-mix asphalt surface and waterproofing on the bridge as shown on the plans, in accordance with the applicable portions of Section 440 of the Standard Specifications.

Construction Requirements: All removal shall be done in such a manner that the concrete deck is not damaged. Removal of hot-mix asphalt surface by the use of milling equipment or radiant or direct heat will not be permitted.

Prior to placement of the new waterproofing system and wearing surface, the Engineer will inspect the bridge deck surface to ensure all existing hot-mix asphalt material, waterproofing and other foreign matter have been removed.

Baisis of Payment: This work will be paid for at the contract unit price per square yard (square meter) for HOT-MIX ASPHALT SURFACE REMOVAL COMPLETE.

STRUCTURAL REPAIR OF CONCRETE
Effective: January 1, 2007

Description. This work shall consist of structurally repairing concrete.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement Concrete (Note 1)	1020
(b) R1 Mortar (Note2)	
(c) Normal Weight Concrete (Note 3)	
(d) Shotcrete (High Performance) (Note 4)	
(e) Reinforcement Bars	1006.10
(f) Anchor Bolts	1006.09
(g) Water	1002
(h) Curing Compound (Type I)	1022
(i) Cotton Mats	1022.02
(j) Protective Coat	1023.01
(k) Epoxy (Note 5)	1025
(l) Mechanical Bar Splicers (Note 6)	

Note 1. The concrete shall be Class SI, except the cement factor shall be a minimum 6.65 cwt/cu. yd. (395 kg/cu. m), the coarse aggregate shall be a CA 16, and the strength shall be a minimum 4000 psi (27,500 kPa) compressive or 675 psi (4650 kPa) flexural at 14 days. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, but the cement factor shall not be reduced. This cement factor restriction shall also apply if a water-reducing admixture is used.

Note 2. The R1 Mortar shall be from the Department's approved list of Packaged, Dry, Rapid Hardening, Cementitious Materials for Concrete Repairs with coarse aggregate added. The amount of coarse aggregate added to the R1 Mortar shall be per the manufacturer's recommendations. The coarse aggregate gradation shall be CA 16 from an Aggregate Gradation Control System source or a packaged aggregate meeting Article 1004.02 with a maximum size of 1/2 in. (12.5 mm). The R1 Mortar and coarse aggregate mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer's recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump.

Note 3. The packaged concrete mixture shall be from the Department's approved list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. Proportioning shall be according to ASTM C 387, except the minimum cement factor shall be 6.65 cwt/cu. yd. (395 kg/cu. m). Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer's recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump.

Note 4. A packaged, pre-blended, and dry combination of materials, for the wet-mix shotcrete method shall be provided according to ASTM C 1480. An accelerator is prohibited, except the shotcrete may be modified at the nozzle with a non-chloride accelerator for overhead applications. The shotcrete shall be Type FA, Grade FR, and Class I. The fibers shall be Type III synthetic according to ASTM C 1116.

The 7 and 28 day compressive strength requirements in ASTM C 1480 shall not apply. Instead the shotcrete shall obtain a minimum compressive strength of 4000 psi (27,500 kPa) at 14 days.

The packaged shotcrete shall be limited to the following proportions:

The cement and finely divided minerals shall be 6.05 cwt/cu. yd. (360 kg/cu. m) to

7.50 cwt/cu. yd. (445 kg/cu. m), and the cement shall not be below 4.70 cwt/cu. yd. (279 kg/cu. m).

Class F fly ash is optional and the maximum shall be 15 percent by weight (mass) of cement.

Class C fly ash is optional and the maximum shall be 20 percent by weight (mass) of cement.

Ground granulated blast-furnace slag is optional and the maximum shall be 25 percent by weight (mass) of cement.

Microsilica is required and shall be a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent. As an alternative to microsilica, high-reactivity metakaolin may be used at a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent.

Fly ash shall not be used in combination with ground granulated blast-furnace slag. Class F fly ash shall not be used in combination with Class C fly ash. Microsilica shall not be used in combination with high-reactivity metakaolin. A finely divided mineral shall not be used in combination with a blended hydraulic cement, except for microsilica or high-reactivity metakaolin.

The water/cement ratio shall be a maximum of 0.42.

The air content as shot shall be 4.0 – 8.0 percent.

Note 5. In addition ASTM C 881, Type IV, Grade 2 or 3, Class A, B, or C may be used.

Note 6. Mechanical bar splicers shall be from the approved list of Mechanical Reinforcing Bar Splicers / Coupler Systems, and shall be capable of developing in tension at least 125 percent of the yield strength of the existing reinforcement bar.

Equipment. Equipment shall be according to Article 503.03 and the following.
Chipping Hammer – The chipping hammer for removing concrete shall be a light-duty pneumatic or electric tool with a 15 lb. (7 kg) maximum class or less.

Blast Cleaning Equipment – Blast cleaning equipment for concrete surface preparation shall be the abrasive type, and the equipment shall have oil traps.

Hydrodemolition Equipment – Hydrodemolition equipment for removing concrete shall be calibrated, and shall use water according to Section 1002.

High Performance Shotcrete Equipment – The batching, mixing, pumping, hose, nozzle, and auxiliary equipment shall be for the wet-mix shotcrete method, and shall meet the requirements of ACI 506R.

Construction Requirements

General. The repair methods shall be either formed concrete repair or shotcrete. The repair method shall be selected by the Contractor with the following rules.

(a) Rule 1. For formed concrete repair, a subsequent patch to repair the placement point after initial concrete placement will not be allowed. As an example, this may occur in a vertical location located at the top of the repair.

(b) Rule 2. Formed concrete repair shall not be used for overhead applications.

(c) Rule 3. Shotcrete shall not be used for column repairs greater than 4 in. (100 mm) in depth, or any repair location greater than 8 in. (205 mm) in depth. The only exception to this rule would be for a horizontal application, where the shotcrete may be placed from above in one lift.

(d) Rule 4. If formed concrete repair is used for locations that have reinforcement with less than 0.75 in. (19 mm) of concrete cover, the concrete mixture shall contain fly ash or ground granulated blast-furnace slag at the maximum cement replacement allowed.

Temporary Shoring or Cribbing. When a temporary shoring or cribbing support system is required, the Contractor shall provide details and computations, prepared and sealed by an Illinois licensed Structural Engineer, to the Department for review and approval. When ever possible the support system shall be installed prior to starting the associated concrete removal. If no system is specified, but during the course of removal the need for temporary shoring or cribbing becomes apparent or is directed by the Engineer due to a structural concern, the Contractor shall not proceed with any further removal work until an appropriate and approved support system is installed.

Concrete Removal. The Contractor shall provide ladders or other appropriate equipment for the Engineer to mark the removal areas. Repair configurations will be kept simple, and squared corners will be preferred. The repair perimeter shall be sawed a depth of 1/2 in. (13 mm) or less, as required to avoid cutting the reinforcement. If the concrete is broken or removed beyond the limits of the initial saw cut, the new repair perimeter shall be recut. The areas to be repaired shall have all loose, unsound concrete removed completely by the use of chipping hammers, hydrodemolition equipment, or other methods approved by the Engineer. The concrete removal shall extend along the reinforcement bar until the reinforcement is free of

bond inhibiting corrosion. The outermost layer of reinforcement bar within the repair area shall be undercut to a depth of 3/4 in. (19 mm) or the diameter of the reinforcement bar, whichever value is larger. The underlying transverse reinforcement bar shall also be undercut as previously described, unless the reinforcement is not corroded, and the reinforcement bar is encased and well bonded to the surrounding concrete.

If sound concrete is encountered before existing reinforcement bars are exposed, further removal of concrete shall not be performed unless the minimum repair depth is not met.

The repair depth shall be a minimum of 1 in. (25 mm). The substrate profile shall be ± 1/16 in. (± 1.5 mm). The perimeter of the repair area shall have a vertical face.

If a repair is located at the ground line, any excavation required below the ground line to complete the repair shall be included in this work.

The Contractor shall have a maximum of 14 calendar days to complete each repair location with concrete or shotcrete, once concrete removal has started for the repair.

The Engineer shall be notified of concrete removal that exceeds 6 in. (150 mm) in depth, one fourth the cross section of a structural member, more than half the vertical column reinforcement is exposed in a cross section, more than 6 consecutive reinforcement bars are exposed in any direction, within 1.5 in. (38 mm) of a bearing area, or other structural concern. Excessive deterioration or removal may require further evaluation of the structure or installation of temporary shoring and cribbing support system.

Surface Preparation. Prior to placing the concrete or shotcrete, the Contractor shall prepare the repair area and exposed reinforcement by blast cleaning. The blast cleaning shall provide a surface that is free of oil, dirt, and loose material.

If a succeeding layer of shotcrete is to be applied, the initial shotcrete surface and remaining exposed reinforcement shall be free of curing compound, oil, dirt, loose material, rebound (i.e. shotcrete material leaner than the original mixture which ricochets off the receiving surface), and overspray. Preparation may be by lightly brushing or blast cleaning if the previous shotcrete surface is less than 36 hours old. If more than 36 hours old, the surface shall be prepared by blast cleaning.

The repair area and perimeter vertical face shall have a rough surface. Care shall be taken to ensure the perimeter sawcut is roughened. Just prior to concrete or shotcrete placement, saturate the repair area with water to a saturated surface-dry condition. Any standing water shall be removed.

Concrete or shotcrete placement shall be done within 3 calendar days of the surface preparation or the repair area shall be prepared again.

Reinforcement. Exposed reinforcement bars shall be cleaned of concrete and corrosion by blast cleaning. After cleaning, all exposed reinforcement shall be carefully evaluated to determine if replacement or additional reinforcement bars are required.

Reinforcing bars that have been cut or have lost 25 percent or more of their original cross sectional area shall be supplemented by new in kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical bar splicer shall be used when it is not feasible to provide the minimum bar lap. No welding of bars shall be performed.

Intersecting reinforcement bars shall be tightly secured to each other using 0.006 in. (1.6 mm) or heavier gauge tie wire, and shall be adequately supported to minimize vibration during concrete placement or application of shotcrete.

For reinforcement bar locations with less than 0.75 in. (19 mm) of cover, protective coat shall be applied to the completed repair. The application of the protective coat shall be according to Article 503.19, 2nd paragraph, except blast cleaning shall be performed to remove curing compound.

The Contractor shall anchor the new concrete to the existing concrete with 3/4 in. (19 mm) diameter hook bolts for all repair areas where the depth of concrete removal is greater than 8 in. (205 mm) and there is no existing reinforcement extending into the repair area. The hook bolts shall be spaced at 15 in. (380 mm) maximum centers both vertically and horizontally, and shall be a minimum of 12 in. (305 mm) away from the perimeter of the repair. The hook bolts shall be installed according to Section 584.

Repair Methods. All repair areas shall be inspected and approved by the Engineer prior to placement of the concrete or application of the shotcrete.

(a) Formed Concrete Repair. Falsework shall be according to Article 503.05. Forms shall be according to Article 503.06. Formwork shall provide a smooth and uniform concrete finish, and shall approximately match the existing concrete structure. Formwork shall be mortar tight and closely fitted where they adjoin the existing concrete surface to prevent leakage. Air vents may be provided to reduce voids and improve surface appearance. The Contractor may use exterior mechanical vibration, as approved by the Engineer, to release air pockets that may be entrapped.

The concrete for formed concrete repair shall be a Class SI Concrete, or a packaged R1 Mortar with coarse aggregate added, or a package Normal Weight Concrete at the Contractor's option. The concrete shall be placed and consolidated according to Article 503.07. The concrete shall not be placed when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40 °F (4 °C). All repaired members shall be restored as close as practicable to their original dimensions.

Curing shall be done according to Article 1020.13.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period.

The surfaces of the completed repair shall be finished according to Article 503.15.

(b) Shotcrete. Shotcrete shall be tested by the Engineer for air content according to Illinois Modified AASHTO T 152. Obtain the sample in a damp, non-absorbent container from the discharge end of the nozzle.

For compressive strength of shotcrete, a 18 x 18 x 3.5 in. (457 x 457 x 89 mm) test panel shall be shot by the Contractor for testing by the Engineer. A steel form test panel shall have a minimum thickness of 3/16 in. (5 mm) for the bottom and sides. A wood form test panel shall have a minimum 3/4 in. (19 mm) thick bottom, and a minimum 1.5 in. (38 mm) thickness for the sides. The test panel shall be cured according to Article 1020.13 (a) (3) or (5) while stored at the jobsite and during delivery to the laboratory. After delivery to the laboratory for testing, curing and testing shall be according to ASTM C 1140.

The method of alignment control (i.e. ground wires, guide strips, depth gages, depth probes, and formwork) to ensure the specified shotcrete thickness and reinforcing bar cover is obtained shall be according to ACI 506R. Ground wires shall be removed after completion of cutting operations. Guide strips and formwork shall be of dimensions and a configuration that do not prevent proper application of shotcrete. Metal depth gauges shall be cut 1/4 in. (6 mm) below the finished surface. All repaired members shall be restored as close as practicable to their original dimensions.

The shotcrete shall not be applied when the air temperature is below 45°F (7°C) and falling or below 40°F (4°C). Shotcrete shall not be applied when the air temperature is greater than 90°F (32°C). The applied shotcrete shall have a minimum temperature of 50°F (10°C) and a maximum temperature of 90°F (32°C). The shotcrete shall not be applied during periods of rain unless protective covers or enclosures are installed. The shotcrete shall not be applied when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40°F (4°C). If necessary, lighting shall be provided to provide a clear view of the shooting area.

The shotcrete shall be applied according to ACI 506R, and shall be done in a manner that does not result in cold joints, laminations, sandy areas, voids, sags, or separations. In addition, the shotcrete shall be applied in a manner that results in maximum densification of the shotcrete. Shotcrete which is identified as being unacceptable while still plastic shall be removed and re-applied.

The nozzle shall normally be at a distance of 2 to 5 ft. (0.6 to 1.5 m) from the receiving surface, and shall be oriented at right angles to the receiving surface. Exceptions to this requirement will be permitted to fill corners, encase large diameter reinforcing bars, or as approved by the Engineer. For any exception, the nozzle shall never be oriented more than 45 degrees from the surface. Care shall be taken to keep the front face of the reinforcement bar clean during shooting operations. Shotcrete shall be built up from behind the reinforcement bar. Accumulations of rebound and overspray shall be continuously removed prior to application of new shotcrete. Rebound material shall not be incorporated in the work.

Whenever possible, shotcrete shall be applied to the full thickness in a single layer. The maximum thickness shall be 4 in. (100 mm) unless the shotcrete is applied from above on a horizontal surface, or a thicker application is approved by the Engineer. When two or more

layers are required, the minimum number shall be used and shall be done in a manner without sagging or separation. A flash coat (i.e. a thin layer of up to 1/4 in. (6 mm) applied shotcrete) may be used as the final lift for overhead applications.

Prior to application of a succeeding layer of shotcrete, the initial layer of shotcrete shall be prepared according to the surface preparation and reinforcement bar cleaning requirements. Upon completion of the surface preparation and reinforcement bar treatment, water shall be applied according to the surface preparation requirements unless the surface is moist. The second layer of shotcrete shall then be applied within 30 minutes.

Shotcrete shall be cut back to line and grade using trowels, cutting rods, screeds or other suitable devices. The shotcrete shall be allowed to stiffen sufficiently before cutting. Cutting shall not cause cracks or delaminations in the shotcrete. For depressions, cut material may be used for small areas. Rebound material shall not be incorporated in the work. For the final finish, a wood float shall be used to approximately match the existing concrete texture. All repaired members shall be restored as close as practicable to their original dimensions.

Cotton mats shall be applied, according to Article 1020.13(a)(5), to the exposed layer of shotcrete within 10 minutes after finishing, and wet curing shall begin immediately. As an alternative, Type I curing compound shall be applied within 10 minutes and moist curing with cotton mats shall begin within 3 hours.

When a shotcrete layer is to be covered by a succeeding shotcrete layer within 36 hours, the repair area shall be protected with intermittent hand fogging, or wet curing with either burlap or cotton mats shall begin within 10 minutes. Intermittent hand fogging may be used only for the first hour. Thereafter, wet curing with burlap or cotton mats shall be used until the succeeding shotcrete layer is applied. Intermittent hand fogging may be extended to the first hour and a half if the succeeding shotcrete layer is applied by the end of this time.

The curing period shall be for 7 days, except when there is a succeeding layer of shotcrete. In this instance, the initial shotcrete layer shall be cured until the surface preparation and reinforcement bar treatment is started.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period.

Inspection of Completed Work. The Contractor shall provide ladders or other appropriate equipment for the Engineer to inspect the repaired areas. After curing but no sooner than 28 days after placement of concrete or shooting of shotcrete, the repair shall be examined for conformance with original dimensions, cracks, voids, and delaminations. Sounding for delaminations will be done with a hammer or by other methods determined by the Engineer.

The repaired area shall be removed and replaced, as determined by the Engineer, for nonconformance with original dimensions, surface cracks greater than 0.01 in. (0.25 mm) in width, map cracking with a crack spacing in any direction of 18 in. (0.45 m) or less, voids, or delaminations.

If a nonconforming repair is allowed to remain in place, cracks 0.01 in. (0.25 mm) or less shall be repaired with epoxy according to Section 590. For cracks less than 0.007 in. (2 mm), the epoxy may be applied to the surface of the crack. Voids shall be repaired according to Article 503.15.

Publications and Personnel Requirements. The Contractor shall provide a current copy of ACI 506R to the Engineer a minimum of one week prior to start of construction.

The shotcrete crew foreman shall have current American Concrete Institute (ACI) nozzlemen certification for vertical wet and overhead wet applications. A copy of the certificate shall be given to the Engineer.

Method of Measurement. This work will be measured for payment in place and the area computed in square feet (square meters). For a repair at a corner, both sides will be measured.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 IN. (125 MM), STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 IN. (125 MM).

When there is no pay item for temporary shoring or cribbing, the work to design, install, and remove the temporary shoring and cribbing will be paid for according to Article 109.04.

The furnishing and installation of supplemental reinforcement bars, mechanical bar splicers, hook bolts, and protective coat will be paid according to Article 109.04.

CEMENT (BDE)
Effective: January 1, 2007

Revise Section 1001 of the Standard Specifications to read:

"**SECTION 1001. CEMENT**

1001.01 Cement Types. Cement shall be according to the following.

(a) Portland Cement. Acceptance of portland cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland cement shall be according to ASTM C 150, and shall meet the standard physical and chemical requirements. Type I or Type II may be used for cast-in-place, precast, and precast prestressed concrete. Type III may be used according to Article 1020.04, or when approved by the Engineer. All other cements referenced in ASTM C 150 may be used when approved by the Engineer.

The total of all organic processing additions shall be a maximum of 1.0 percent by weight (mass) of the cement and the total of all inorganic processing additions shall be a maximum of 4.0 percent by weight (mass) of the cement. Organic processing additions

shall be limited to grinding aids that improve the flowability of cement, reduce pack set, and improve grinding efficiency. Inorganic processing additions shall be limited to granulated blast-furnace slag according to the chemical requirements of AASHTO M 302 and Class C fly ash according to the chemical requirements of AASHTO M 295.

(b) Portland-Pozzolan Cement. Acceptance of portland-pozzolan cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland-pozzolan cement shall be according to ASTM C 595 and shall meet the standard physical and chemical requirements. Type IP or I(PM) may be used for cast-in-place, precast, and precast prestressed concrete, except when Class PP concrete is used. The pozzolan constituent for Type IP shall be a maximum of 21 percent of the weight (mass) of the portland-pozzolan cement. All other cements referenced in ASTM C 595 may be used when approved by the Engineer.

For cast-in-place construction, portland-pozzolan cements shall only be used from April 1 to October 15.

The total of all organic processing additions shall be a maximum of 1.0 percent by weight (mass) of the cement. Organic processing additions shall be limited to grinding aids as defined in (a) above. Inorganic processing additions shall not be used.

(c) Portland Blast-Furnace Slag Cement. Acceptance of portland blast-furnace slag cement shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Portland or Blended Cement Acceptance Procedure for Qualified and Non-Qualified Plants".

Portland blast-furnace slag cement shall be according to ASTM C 595 and shall meet the standard physical and chemical requirements. Type I(SM) slag-modified portland cement may be used for cast-in-place, precast, and precast prestressed concrete, except when Class PP concrete is used. All other cements referenced in ASTM C 595 may be used when approved by the Engineer.

For cast-in-place construction, portland blast-furnace slag cements shall only be used from April 1 to October 15.

The total of all organic processing additions shall be a maximum of 1.0 percent by weight (mass) of the cement. Organic processing additions shall be limited to grinding aids as defined in (a) above. Inorganic processing additions shall not be used.

(d) Rapid Hardening Cement. Rapid hardening cement shall be used according to Article 1020.04 or when approved by the Engineer. The cement shall be on the Department's current "Approved List of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs", and shall be according to the following.

(1) The cement shall have a maximum final set of 25 minutes, according to Illinois Modified ASTM C 191.

(2) The cement shall have a minimum compressive strength of 2000 psi (13,800 kPa) at 3.0 hours, and 4000 psi (27,600 kPa) at 24.0 hours, according to Illinois Modified ASTM C 109.

(3) The cement shall have a maximum drying shrinkage of 0.050 percent at seven days, according to Illinois Modified ASTM C 596.

(4) The cement shall have a maximum expansion of 0.020 percent at 14 days, according to Illinois Modified ASTM C 1038.

(5) The cement shall have a minimum 80 percent relative dynamic modulus of elasticity; and shall not have a weight (mass) gain in excess of 0.15 percent or a weight (mass) loss in excess of 1.0 percent, after 100 cycles, according to Illinois Modified AASHTO T 161, Procedure B. At 100 cycles, the specimens are measured and weighed at 73 ºF (23 ºC).

(e) Calcium Aluminate Cement. Calcium aluminate cement shall be used when specified by the Engineer. The cement shall meet the standard physical requirements for Type I cement according to ASTM C 150, except the time of setting shall not apply. The chemical requirements shall be determined according to ASTM C 114 and shall be as follows: minimum 38 percent aluminum oxide (Al_2O_3), maximum 42 percent calcium oxide (CaO), maximum 1 percent magnesium oxide (MgO), maximum 0.4 percent sulfur trioxide (SO_3), maximum 1 percent loss on ignition, and maximum 3.5 percent insoluble residue.

1001.02 Uniformity of Color. Cement contained in single loads or in shipments of several loads to the same project shall not have visible differences in color.

1001.03 Mixing Brands and Types. Different brands or different types of cement from the same manufacturing plant, or the same brand or type from different plants shall not be mixed or used alternately in the same item of construction unless approved by the Engineer.

1001.04 Storage. Cement shall be stored and protected against damage, such as dampness which may cause partial set or hardened lumps. Different brands or different types of cement from the same manufacturing plant, or the same brand or type from different plants shall be kept separate."

ENGINEER'S FIELD OFFICE TYPE A (BDE)
Effective: April 1, 2007

Add the following to Article 670.02 of the Standard Specifications:

"(n) One wireless data router with wireless network connection to access the Department's network for the exclusive use of the Engineer. The wireless data router shall operate within a temperature range of 32 to 131°F (0 to 55°C) and have the following capabilities.

(1) Connection.

a. CDMA wireless technology with authentication and identification system for security.

b. CDMA based EV-DO(rev.A) transmission capabilities.

c. EVDO(rev.A) shall be backward compatible through both EVDO(rev0) and 1XRTT.

d. Connection shall be capable of compression in order to optimize the connection speed.

(2) Router.

a. A minimum of four ethernet ports for wired connection.

b. Capable of 802.11b & g for wireless LAN interface.

c. Configurable ability to port data to fax capabilities through the router using efax or IP fax devices.

d. Automatic receipt of IP addresses with DHCP server.

e. Configurable OFDM (Orthogonal Frequency Division Multiplexing) technology.

(3) Security.

a. Configurable capable of 64-bit or 128-bit WEP encryption, and WPA-PSK authentication wireless security (WiFi Protected Access - Pre-shared Key Mode).

b. Configurable LAN security: NAT with DHCP, PPTP VPN pass-through, MAC filtering, IP filtering, and filter scheduling.

c. Configurable firewall security at the router."

EPOXY PAVEMENT MARKINGS (BDE)
Effective: January 1, 2007

Revise Article 1095.04(a) of the Standard Specifications to read:

"(a) The epoxy marking material shall consist of a 100 percent solid two part system formulated and designed to provide a simple volumetric mixing ratio of two components (must be two volumes of Part A and one volume of Part B). No volatile solvents or fillers will be allowed. Total solids shall not be less than 99 percent when determined, on the mixed material, according to ASTM D 2369, excluding the solvent dispersion."

Revise Article 1095.04(d) of the Standard Specifications to read:

"(d) Composition by Weight of Component A as Determined by Low Temperature Ashing. A 0.5 gram sample of component A shall be dispersed with a paperclip on the bottom of an aluminum dish, weighed and then heated in a muffle furnace at 1000 ºF (538 ºC) for one hour and weighed again. No solvents shall be used for dispersion. The difference in the weights shall be calculated and meet the following.

Pigment*	White	Yellow
Titanium Dioxide ASTM D 476 Type II	21-24%	
Organic Yellow, Titanium Dioxide, Other		± 2%**
Epoxy Resin	76-79%	± 2%**

* No extender pigments are permitted.
** From the pigment and epoxy resin content determined on qualification samples."

Revise Article 1095.04(f) of the Standard Specifications to read:

"(f) The daylight directional reflectance of the paint (without glass spheres) applied at 14 to 16 mils (0.35 to 0.41 mm) shall meet the following requirements when tested, using a color spectrophotometer with 45 degree circumferential/zero degree geometry, illuminant C, and two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

White:	Daylight Reflectance	80 % min.
Yellow:*	Daylight Reflectance	50 % min.

*Shall meet the coordinates of the following color tolerance chart.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456"

Revise Article 1095.04(h) of the Standard Specifications to read:

"(h) The epoxy pavement marking material, when mixed in the proper mix ratio and tested according to ASTM D 7234 shall have a degree of adhesion which results in a 100 percent concrete failure in the performance of this test."

Revise Article 1095.04(n) of the Standard Specifications to read:

"(n) The epoxy paint shall be applied to an aluminum alloy panel (Federal Test Std. No. 141, Method 2013) at a film thickness of 14 to 16 mils (0.35 to 0.41 mm) and allowed to cure for 72 hours at room temperature. 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).

The cycle shall consist of four hours UV exposure at 122 °F (50 °C) followed by four hours of condensation at 104 °F (40 °C). UVB 313 bulbs shall be used. At the end of the exposure period, the panel shall show no more than 10 Hunter Lab Delta E units or substantial change in gloss from the original, non-exposed paint."

ERRATA FOR THE 2007 STANDARD SPECIFICATIONS (BDE)
Effective: January 1, 2007 Revised: April 1, 2007

Page 60 Article 109.07(a). In the second line of the first paragraph change “amount” to “quantity”.

Page 207 Article 406.14. In the second line of the second paragraph change “MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS, of the mixture composition specified;” to “MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS;”.

Page 345 Article 505.08(l). In the third line of the first paragraph change “1/8 mm” to “1/8 in.”.

Page 345 Article 505.08(l). In the nineteenth line of the first paragraph change “is” to “in”.

Page 383 Article 516.04(b)(1). In the fifth line of the first paragraph change “drillingpouring” to “pouring”.

Page 390 Article 520.02(h). Change “1027.021” to “1027.01”.

Page 398 Article 540.07(b). Add the following two paragraphs after the third paragraph:

“Excavation in rock will be measured for payment according to Article 502.12.

Removal and disposal of unstable and/or unsuitable material below plan bedding grade will be measured for payment according to Article 202.07.”

Page 398 Article 540.08. Add the following two paragraphs after the fifth paragraph:

“Excavation in rock will be paid for according to Article 502.13.

Removal and disposal of unstable and/or unsuitable material below plan bedding grade will be paid for according to Article 202.08.”

Page 435 Article 542.04(b). Delete the last sentence of the last paragraph.

Page 465 Article 551.06. In the second line of the first paragraph change “or” to “and/or”.

Page 585 Article 701.19(a). Add “701400” to the second line of the first paragraph.

Page 586 Article 701.19(c). Delete “701400” from the second line of the first paragraph.

Page 586 Article 701.19. Add the following subparagraph to this Article:

“(f) Removal of existing pavement markings and raised reflective pavement markers will be measured for payment according to Article 783.05.”

Page 587 Article 701.20(b). Delete “TRAFFIC CONTROL AND PROTECTION 701400;” from the first paragraph.

Page 588 Article 701.20. Add the following subparagraph to this Article.

"(j) Removal of existing pavement markings and raised reflective pavement markers will be paid for according to Article 783.06."

Page 762 Article 1020.04. In Table 1 Classes of Portland Cement Concrete and Mix Design Criteria, add to the minimum cement factor for Class PC Concrete "5.65 (TY III)", and add to the maximum cement factor for Class PC Concrete "7.05 (TY III)".

Page 765 Article 1020.04. In Table 1 Classes of Portland Cement Concrete and Mix Design Criteria (metric), add to the minimum cement factor for Class PC Concrete "335 (TY III)", and add to the maximum cement factor for Class PC Concrete "418 (TY III)".

Page 800 Article 1030.05(a)(12). Revise "Dust Collection Factor" to "Dust Correction Factor".

Page 800 Article 1030.05(a)(14). Revise the first occurrence of Article 1030.05(a)(14) to Article 1030.05(a)(13).

Page 809 Article 1030.05. Revise the subparagraph "(a) Quality Assurance by the Engineer." to read "(e) Quality Assurance by the Engineer.".

Page 946 Article 1080.03(a)(1). In the third line of the first paragraph revise "(300 µm)" to "(600 µm)".

Page 963 Article 1083.02(b). In the second line of the first paragraph revise "ASTM D 4894" to "ASTM D 4895".

Page 1076 In the Index of Pay Items delete the pay item "BITUMINOUS SURFACE REMOVAL – BUTT JOINT".

HOT-MIX ASPHALT EQUIPMENT, SPREADING AND FINISHING MACHINE (BDE)
Effective: January 1, 2005 Revised: January 1, 2007

Revise the fourth paragraph of Article 1102.03 of the Standard Specifications to read:

"The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to uniformly place a non-segregated mixture in front of the screed. The distribution system shall have chain curtains, deflector plates, and /or other devices designed and built by the paver manufacturer to prevent segregation during distribution of the mixture from the hopper to the paver screed. The Contractor shall submit a written certification that the devices recommended by the paver manufacturer to prevent segregation have been installed and are operational. Prior to paving, the Contractor, in the presence of the Engineer, shall visually inspect paver parts specifically identified by the manufacturer for excessive wear and the need for replacement. The Contractor shall supply a completed check list to the Engineer noting the condition of the parts. Worn parts shall be replaced. The Engineer may require an additional inspection prior to placement of the surface course or at other times throughout the work."

HOT-MIX ASPHALT - FIELD VOIDS IN THE MINERAL AGGREGATE (BDE)
Effective: April 1, 2007

Add the following to the table in Article 1030.05(d)(2)a. of the Standard Specifications:

"Parameter	Frequency of Tests High ESAL Mixture Low ESAL Mixture	Frequency of Tests All Other Mixtures	Test Method See Manual of Test Procedures for Materials
VMA Note 5.	1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)	1 per day	Illinois-Modified AASHTO R 35

Note 5. The G_{sb} used in the voids in the mineral aggregate (VMA) calculation shall be the same average G_{sb} value listed in the mix design."

Add the following to the Control Limits table in Article 1030.05(d)(4) of the Standard Specifications:

"CONTROL LIMITS			
Parameter	High ESAL Low ESAL Individual Test	High ESAL Low ESAL Moving Avg. of 4	All Other Individual Test
VMA	-0.7 % 2/	-0.5 % 2/	N/A

2/ Allowable limit below minimum design VMA requirement"

Add the following to the table in Article 1030.05(d)(5) of the Standard Specifications:

"CONTROL CHART REQUIREMENTS	High ESAL Low ESAL	All Other
	VMA"	

Revise the heading of Article 1030.05(d)(6)a.1. of the Standard Specifications to read:

"1. Voids, VMA, and Asphalt Binder Content."

Revise the first sentence of the first paragraph of Article 1030.05(d)(6)a.1.(a.) of the Standard Specifications to read:

"If the retest for voids, VMA, or asphalt binder content exceeds control limits, HMA production shall cease and immediate corrective action shall be instituted by the Contractor."

Revise the table in Article 1030.05(e) of the Standard Specifications to read:

"Test Parameter	Acceptable Limits of Precision
% Passing: 1/	
1/2 in. (12.5 mm)	5.0 %
No. 4 (4.75 mm)	5.0 %
No. 8 (2.36 mm)	3.0 %
No. 30 (600 μm)	2.0 %
Total Dust Content No. 200 (75 μm) 1/	2.2 %
Asphalt Binder Content	0.3 %
Maximum Specific Gravity of Mixture	0.026
Bulk Specific Gravity	0.030
VMA	1.4 %
Density (% Compaction)	1.0 % (Correlated)

1/ Based on washed ignition."

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.

PLASTIC BLOCKOUTS FOR GUARDRAIL (BDE)
Effective: November 1, 2004 Revised: January 1, 2007

Add the following to Article 630.02 of the Standard Specifications:

"(g) Plastic Blockouts (Note 1.)

Note 1. Plastic blockouts may be used in lieu of wood blockouts for steel plate beam guardrail. The plastic blockouts shall be the minimum dimensions shown on the plans and shall be on the Department's approved list."

RECLAIMED ASPHALT PAVEMENT (RAP) (BDE)
Effective: January 1, 2007 Revised: April 1, 2007

In Article 1030.02(g), delete the last sentence of the first paragraph in (Note 2).

Revise Section 1031 of the Standard Specifications to read:

"**SECTION 1031. RECLAIMED ASPHALT PAVEMENT**

1031.01 Description. Reclaimed asphalt pavement (RAP) is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded hot-mix asphalt (HMA)

pavement. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.

1031.02 Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP shall be added to the pile after the pile has been sealed. Stockpiles shall be sufficiently separated to prevent intermingling at the base. Stockpiles shall be identified by signs indicating the type as listed below (i.e. "Homogeneous Surface").

Prior to milling, the Contractor shall request the District to provide verification of the quality of the RAP to clarify appropriate stockpile.

(a) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures and represent: 1) the same aggregate quality, but shall be at least C quality; 2) the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag); 3) similar gradation; and 4) similar asphalt binder content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogenous" with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.

(b) Conglomerate 5/8. Conglomerate 5/8 RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate 5/8 RAP shall be processed prior to testing by crushing to where all RAP shall pass the 5/8 in. (16 mm) or smaller screen. Conglomerate 5/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

(c) Conglomerate 3/8. Conglomerate 3/8 RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least B quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate 3/8 RAP shall be processed prior to testing by crushing to where all RAP shall pass the 3/8 in. (9.5 mm) or smaller screen. Conglomerate 3/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

(d) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from Class I, Superpave (High or Low ESAL), HMA (High or Low ESAL), or equivalent mixtures. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

(e) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

1031.03 Testing. When used in HMA, the RAP shall be sampled and tested either during or after stockpiling.

For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

(a) Testing Conglomerate 3/8. In addition to the requirements above, conglomerate 3/8 RAP shall be tested for maximum theoretical specific gravity (G_{mm}) at a frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

(b) Evaluation of Test Results. All of the extraction results shall be compiled and averaged for asphalt binder content and gradation and, when applicable G_{mm}. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	Homogeneous / Conglomerate	Conglomerate “D” Quality
1 in. (25 mm)		± 5 %
1/2 in. (12.5 mm)	± 8 %	± 15 %
No. 4 (4.75 mm)	± 6 %	± 13 %
No. 8 (2.36 mm)	± 5 %	
No. 16 (1.18 mm)		± 15 %
No. 30 (600 μm)	± 5 %	
No. 200 (75 μm)	± 2.0 %	± 4.0 %
Asphalt Binder	± 0.4 % [1/]	± 0.5 %
G_{mm}	± 0.02 [2/]	

1/ The tolerance for conglomerate 3/8 shall be ± 0.3 %.

2/ Applies only to conglomerate 3/8. When variation of the G_{mm} exceeds the ± 0.02 % tolerance, a new conglomerate 3/8 stockpile shall be created which will also require an additional mix design.

If more than 20 percent of the individual sieves are out of the gradation tolerances, or if more than 20 percent of the asphalt binder content test results fall outside the appropriate tolerances, the RAP shall not be used in HMA unless the RAP representing the failing tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the Illinois Test Procedure, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

1031.04 Quality Designation of Aggregate in RAP. The quality of the RAP shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

(a) RAP from Class I, Superpave (High ESAL), or HMA (High ESAL) surface mixtures are designated as containing Class B quality coarse aggregate.

(b) RAP from Superpave (Low ESAL)/HMA (Low ESAL) IL-19.0L binder and IL-9.5L surface mixtures are designated as Class D quality coarse aggregate.

(c) RAP from Class I, Superpave (High ESAL), or HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.

(d) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

1031.05 Use of RAP in HMA. The use of RAP in HMA shall be as follows.

(a) Coarse Aggregate Size. The coarse aggregate in all RAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.

(b) Steel Slag Stockpiles. RAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) surface mixtures only.

(c) Use in HMA Surface Mixtures (High and Low ESAL). RAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be either homogeneous or conglomerate 3/8, in which the coarse aggregate is Class B quality or better.

(d) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP stockpiles for use in HMA binder mixtures (High and Low

ESAL), HMA base course, and HMA base course widening shall be homogeneous, conglomerate 5/8, or conglomerate 3/8, in which the coarse aggregate is Class C quality or better.

(e) Use in Shoulders and Subbase. RAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be homogeneous, conglomerate 5/8, conglomerate 3/8, or conglomerate DQ.

(f) The use of RAP shall be a contractor's option when constructing HMA in all contracts. When the contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in the table for a given N Design.

Max RAP Percentage

HMA MIXTURES 1/, 3/	MAXIMUM % RAP		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified
30	30	30	10
50	25	15	10
70	15 / 25 2/	10 / 15 2/	10
90	10	10	10
105	10	10	10

1/ For HMA Shoulder and Stabilized Sub-Base (HMA) N-30, the amount of RAP shall not exceed 50% of the mixture.

2/ Value of Max % RAP if 3/8 RAP is utilized.

3/ When RAP exceeds 20%, the high & low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25% RAP would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28).

1031.06 HMA Mix Designs. At the Contractor's option, HMA mixtures may be constructed utilizing RAP material meeting the above detailed requirements.

RAP designs shall be submitted for volumetric verification. If additional RAP stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP stockpile and HMA mix design, and meets all of the requirements herein, the additional RAP stockpiles may be used in the original mix design at the percent previously verified.

1031.07 HMA Production. The coarse aggregate in all RAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

To remove or reduce agglomerated material, a scalping screen, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAP feed system to

remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If the RAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP and either switch to the virgin aggregate design or submit a new RAP design. When producing mixtures containing conglomerate 3/8 RAP, a positive dust control system shall be utilized.

HMA plants utilizing RAP shall be capable of automatically recording and printing the following information.

(a) Dryer Drum Plants.

(1) Date, month, year, and time to the nearest minute for each print.

(2) HMA mix number assigned by the Department.

(3) Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

(4) Accumulated dry weight of RAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

(5) Accumualted mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.

(6) Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.

(7) Residual asphalt binder in the RAP material as a percent of the total mix to the nearest 0.1 percent.

(8) Aggregate and RAP moisture compensators in percent as set on the control panel. (Requied when accumulated or individual aggregate and RAP are printed in wet condition.)

(b) Batch Plants.

(1) Date, month, year, and time to the nearest minute for each print.

(2) HMA mix number assigned by the Department.

(3) Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).

(4) Mineral filler weight to the nearest pound (kilogram).

(5) RAP weight to the nearest pound (kilogram).

(6) Virgin asphalt binder weight to the nearest pound (kilogram).

(7) Residual asphalt binder in the RAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

1031.08 RAP in Aggregate Surface Course and Aggregate Shoulders. The use of RAP in aggregate surface course and aggregate shoulders shall be as follows.

(a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Other". The testing requirements of Article 1031.03 shall not apply.

(b) Gradation. One hundred percent of the RAP material shall pass the 1 1/2 in. (37.5 mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded or single sized will not be accepted."

REFLECTIVE SHEETING ON CHANNELIZING DEVICES (BDE)
Effective: April 1, 2007

Revise the seventh paragraph of Article 1106.02 of the Standard Specifications to read:

"At the time of manufacturing, the retroreflective prismatic sheeting used on channelizing devices shall meet or exceed the initial minimum coefficient of retroreflection as specified in the following table. Measurements shall be conducted according to ASTM E 810, without averaging. Sheeting used on cones, drums and flexible delineators shall be reboundable as tested according to ASTM D 4956. Prestriped sheeting for rigid substrates on barricades shall be white and orange.

Initial Minimum Coefficient of Retroreflection candelas/foot candle/sq ft (candelas/lux/sq m) of material				
Observation Angle (deg.)	Entrance Angle (deg.)	White	Orange	Fluorescent Orange
0.2	-4	365	160	150
0.2	+30	175	80	70
0.5	-4	245	100	95
0.5	+30	100	50	40"

Revise the first sentence of the first paragraph of Article 1106.02(c) of the Standard Specifications to read:

"Barricades and vertical panels shall have alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass."

Revise the third sentence of the first paragraph of Article 1106.02(d) of the Standard Specifications to read:

"The bottom panels shall be 8 x 24 in. (200 x 600 mm) with alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass."

REINFORCEMENT BARS (BDE)
Effective: November 1, 2005 Revised: January 1, 2007

Revise Article 1006.10(a) of the Standard Specifications to read:

"(a) Reinforcement Bars. Reinforcement bars will be accepted according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reinforcement Bar and Dowel Bar Plant Certification Procedure". The Department will maintain an approved list of producers.

(1) Reinforcement Bars (Non-Coated). Reinforcement bars shall be according to ASTM A 706 (A 706M), Grade 60 (420) for deformed bars and the following.

a. Chemical Composition. The chemical composition of the bars shall be according to the following table.

CHEMICAL COMPOSITION		
Element 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 706 (A 706M). 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 284 (M 284M) and the following.

a. Certification. The epoxy coating applicator shall be certified under the Concrete Reinforcing Steel Institute's (CRSI) Epoxy Plant Certification Program.

b. Coating Thickness. The thickness of the epoxy coating shall be 7 to 12 mils (0.18 to 0.30 mm). When spiral reinforcment is coated after fabrication, the thickness of the epoxy coating shall be 7 to 20 mils (0.18 to 0.50 mm).

c. Cutting Reinforcement. Reinforcement bars may be sheared or sawn to length after coating, providing the end damage to the coating does not extend more than 0.5 in. (13 mm) back and the cut is patched before any visible rusting appears. Flame cutting will not be permitted."

SELF-CONSOLIDATING CONCRETE FOR CAST-IN-PLACE CONSTRUCTION (BDE)
Effective: November 1, 2005 Revised: January 1, 2007

Definition. Self-consolidating concrete is a flowable mixture that does not require mechanical vibration for consolidation.

Usage. Self-consolidating concrete may be used for cast-in-place concrete construction items involving Class MS, DS, and SI concrete.

Materials. Materials shall be according to Section 1021 of the Standard Specifications.

Mix Design Criteria. Article 1020.04 of the Standard Specifications shall apply, except as follows:

(a) The cement factor shall be according to Article 1020.04 of the Standard Specifications. If the maximum cement factor is not specified, it shall not exceed 7.05 cwt/cu yd (418 kg/cu m). The cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used.

(b) The maximum allowable water/cement ratio shall be according to Article 1020.04 of the Standard Specifications or 0.44, whichever is lower.

(c) The slump requirements shall not apply.

(d) The coarse aggregate gradations shall be CA 13, CA 14, CA 16, or a blend of these gradations. CA 11 may be used when the Contractor provides satisfactory evidence to the Engineer that the mix will not segregate. The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used.

(e) The slump flow range shall be ± 2 in. (± 50 mm) of the Contractor target value, and within the overall Department range of 20 in. (510 mm) minimum to 28 in. (710 mm) maximum.

(f) The visual stability index shall be a maximum of 1.

(g) The J-ring value shall be a maximum of 4 in. (100 mm). The Contractor may specify a lower maximum in the mix design.

(h) The L-box blocking ratio shall be a minimum of 60 percent. The Contractor may specify a higher minimum in the mix design.

(i) The column segregation index shall be a maximum 15 percent.

(j) The hardened visual stability index shall be a maximum of 1.

Test Methods. Illinois Test Procedures SCC-1, SCC-2, SCC-3, SCC-4, SCC-5, SCC-6, and Illinois Modified AASHTO T 22, 23, 121, 126, 141, 152, 177, 196, and 309 shall be used for testing of self-consolidating concrete mixtures.

Mix Design Submittal. The Contractor's Level III PCC Technician shall submit a mix design according to the "Portland Cement Concrete Level III Technician" course manual, except target slump information is not applicable and will not be required. However, a slump flow target range shall be submitted. In addition, the design mortar factor may exceed 1.10 and durability test data will be waived.

A J-ring value shall be submitted if a lower mix design maximum will apply. An L-box blocking ratio shall be submitted if a higher mix design minimum will apply. The Contractor shall also indicate applicable construction items for the mix design.

Trial mixture information will be required by the Engineer. A trial mixture is a batch of concrete tested by the Contractor to verify the Contractor's mix design will meet specification requirements. Trial mixture information shall include test results as specified in the "Portland Cement Concrete Level III Technician" course manual. Test results shall also include slump

flow, visual stability index, J-ring value, L-box blocking ratio, column segregation index, and hardened visual stability index. For the trial mixture, the slump flow shall be near the midpoint of the proposed slump flow target range.

Trial Batch. A minimum 2 cu yd (1.5 cu m) trial batch shall be produced, and the self-consolidating concrete admixture dosage proposed by the Contractor shall be used. The slump flow shall be within 1.0 in. (25 mm) of the maximum slump flow range specified by the Contractor, and the air content shall be within the top half of the allowable specification range.

The trial batch shall be scheduled a minimum of 21 calendar days prior to anticipated use and shall be performed in the presence of the Engineer.

The Contractor shall provide the labor, equipment, and materials to test the concrete. The mixture will be evaluated by the Engineer for strength, air content, slump flow, visual stability index, J-ring value, L-box blocking ratio, column segregation index, and hardened visual stability index.

Upon review of the test data from the trial batch, the Engineer will verify or deny the use of the mix design and notify the Contractor. Verification by the Engineer will include the Contractor's target slump flow range. If applicable, the Engineer will verify the Contractor's maximum J-ring value and minimum L-box blocking ratio.

A new trial batch will be required whenever there is a change in the source of any component material, proportions beyond normal field adjustments, dosage of the self-consolidating concrete admixture, batch sequence, mixing speed, mixing time, or as determined by the Engineer. The testing criteria for the new trial batch will be determined by the Engineer.

When necessary, the trial batches shall be disposed of according to Article 202.03 of the Standard Specifications.

Mixing Portland Cement Concrete. In addition to Article 1020.11 of the Standard Specifications, the mixing time for central-mixed concrete shall not be reduced as a result of a mixer performance test. Truck-mixed or shrink-mixed concrete shall be mixed in a truck mixer for a minimum of 100 revolutions.

Wash water, if used, shall be completely discharged from the drum or container before the succeeding batch is introduced.

The batch sequence, mixing speed, and mixing time shall be appropriate to prevent cement balls and mix foaming for central-mixed, truck-mixed, and shrink-mixed concrete.

Falsework and Forms. In addition to Articles 503.05 and 503.06 of the Standard Specifications, the Contractor shall consider the fluid nature of the concrete for designing the falsework and forms. Forms shall be tight to prevent leakage of fluid concrete.

Placing and Consolidating. Concrete placement and consolidation shall be according to Article 503.07 of the Standard Specifications, except as follows:

Revise the third paragraph of Article 503.07 of the Standard Specifications to read:

"Open troughs and chutes shall extend as nearly as practicable to the point of deposit. The drop distance of concrete shall not exceed 5 ft (1.5 m). If necessary, a tremie shall be used to meet this requirement. The maximum distance of horizontal flow from the point of deposit shall be 25 ft (7.6 m), unless approved otherwise by the Engineer. For drilled shafts, free fall placement will not be permitted."

Delete the seventh, eighth, ninth, and tenth paragraphs of Article 503.07 of the Standard Specifications.

Add to the end of the eleventh paragraph of Article 503.07 of the Standard Specifications the following:

"Concrete shall be rodded with a piece of lumber, conduit, or vibrator if the material has lost its fluidity prior to placement of additional concrete. The vibrator shall be the pencil head type with a maximum diameter or width of 1 in. (25 mm). Any other method for restoring the fluidity of the concrete shall be approved by the Engineer."

Quality Control by Contractor at Plant. The specified test frequencies for aggregate gradation, aggregate moisture, air content, unit weight/yield, and temperature shall be performed as indicated in the contract plans.

Slump flow, visual stability index, and J-ring or L-box tests shall be performed as needed to control production. The column segregation index test and hardened visual stability index test will not be required to be performed at the plant.

Quality Control by Contractor at Jobsite. The specified test frequencies for air content, strength, and temperature shall be performed as indicated in the contract plans.

Slump flow, visual stability index, and J-ring or L-box tests shall be performed on the first two truck deliveries of the day, and every 50 cu yd (40 cu m) thereafter. The Contractor shall select either the J-ring or L-box test for jobsite testing.

The column segregation index test will not be required to be performed at the jobsite. The hardened visual stability index test shall be performed on the first truck delivery of the day, and every 300 cu yd (230 cu m) thereafter. Slump flow, visual stability index, J-ring value or L-box blocking ratio, air content, and concrete temperature shall be recorded for each hardened visual stability index test.

The Contractor shall retain all hardened visual stability index cut cylinder specimens until the Engineer notifies the Contractor that the specimens may be discarded.

If mix foaming or other potential detrimental material is observed during placement or at the completion of the pour, the material shall be removed while the concrete is still plastic.

Quality Assurance by Engineer at Plant. For air content and aggregate gradation, quality assurance independent sample testing and split sample testing will be performed as indicated in the contract plans.

For slump flow, visual stability index, and J-ring or L-box tests, quality assurance independent sample testing and split sample testing will be performed as determined by the Engineer.

Quality Assurance by Engineer at Jobsite. For air content and strength, quality assurance independent sample testing and split sample testing will be performed as indicated in the contract plans.

For slump flow, visual stability index, J-ring or L-box, and hardened visual stability index tests, quality assurance independent sample testing will be performed as determined by the Engineer.

For slump flow and visual stability index quality assurance split sample testing, the Engineer will perform tests at the beginning of the project on the first three tests performed by the Contractor. Thereafter, a minimum of ten percent of total tests required of the Contractor will be performed per plant, which will include a minimum of one test per mix design. The acceptable limit of precision will be 1.5 in. (40 mm) for slump flow and a limit of precision will not apply to the visual stability index.

For the J-ring or the L-box quality assurance split sample testing, a minimum of 80 percent of the total tests required of the Contractor will be witnessed by the Engineer per plant, which will include a minimum of one witnessed test per mix design. The Engineer reserves the right to conduct quality assurance split sample testing. The acceptable limit of precision will be 1.5 in. (40 mm) for the J-ring value and ten percent for the L-box blocking ratio.

For each hardened visual stability index test performed by the Contractor, the cut cylinders shall be presented to the Engineer for determination of the rating. The Engineer reserves the right to conduct quality assurance split sample testing. A limit of precision will not apply to the hardened visual stability index.

STEEL PLATE BEAM GUARDRAIL (BDE)
Effective: November 1, 2005 Revised: January 1, 2007

Revise the first paragraph of Article 1006.25 of the Standard Specifications to read:

"**1006.25 Steel Plate Beam Guardrail.** Steel plate beam guardrail, including bolts, nuts, and washers, shall be according to AASHTO M 180. Guardrails shall be Class A, with Type II coatings. The weight (mass) of the galvanized coating for each side of the guardrail shall be at least 2.00 oz/sq ft (610 g/sq m). The overall combined weight (mass) of the coating on both sides shall meet or exceed 4.00 oz/sq ft (1220 g/sq m). The thickness of the zinc or zinc alloy will be determined for each side using the average of at least three non-destructive test readings taken on that side of the guardrail. The minimum average thickness for each side shall be 3.1 mils (79 µm)."

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.

WATER BLASTER WITH VACUUM RECOVERY (BDE)
Effective: April 1, 2006 Revised: January 1, 2007

Add the following to Article 783.02 of the Standard Specifications.

"(c) Water Blaster with Vacuum Recovery .....1101.12"

Revise Article 1101.12 of the Standard Specifications to read.

"**1101.12 Water Blaster with Vacuum Recovery.** The water blaster shall remove the stripe from the pavement using a high pressurized water spray with a vacuum recovery system to provide a clean, almost dry surface, without the use of a secondary cleanup process. The removal shall be to the satisfaction of the Engineer. The equipment shall contain a storage system that allows for the storage of the wastewater while retaining the debris. The operator shall be in immediate control of the blast head."

BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE) (RETURN FORM WITH BID)
Effective: November 2, 2006 Revised: January 2, 2007

Description. For projects with at least 1200 tons (1100 metric tons) of work involving applicable bituminous materials, cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and pavement preservation type surface treatments. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, or joint filling/sealing.

The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$

Where: CA = Cost Adjustment, $.
BPI_P = Bituminous Price Index, as published by the Department for the month the work is performed, $/ton ($/metric ton).
BPI_L = Bituminous Price Index, as published by the Department for the month prior to the letting, $/ton ($/metric ton).
$\%AC_V$ = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC_V will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC_V and undiluted emulsified asphalt will be considered to be 65% AC_V.
Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards: Q, tons = A x D x (G_{mb} x 46.8) / 2000. For HMA mixtures measured in square meters: Q, metric tons = A x D x (G_{mb} x 24.99) / 1000. When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different G_{mb} and % AC_V.

For bituminous materials measured in gallons: Q, tons = V x 8.33 lb/gal x SG / 2000
For bituminous materials measured in liters: Q, metric tons = V x 1.0 kg/L x SG / 1000

Where: A = Area of the HMA mixture, sq yd (sq m).
D = Depth of the HMA mixture, in. (mm).
G_{mb} = Average bulk specific gravity of the mixture, from the approved mix design.
V = Volume of the bituminous material, gal (L).
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI_L and BPI_P in excess of five percent, as calculated by:

Percent Difference = $\{(BPI_L - BPI_P) \div BPI_L\} \times 100$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Return With Bid

ILLINOIS DEPARTMENT OF TRANSPORTATION

OPTION FOR
BITUMINOUS MATERIALS COST ADJUSTMENTS

The bidder shall submit this completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments. After award, this form, when submitted, shall become part of the contract.

Contract No.: _____

Company Name: _____

Contractor's Option:

Is your company opting to include this special provision as part of the contract?

Yes ☐ No ☐

Signature: _____ **Date:** _____

STEEL COST ADJUSTMENT (BDE) (RETURN FORM WITH BID)
Effective: April 2, 2004 Revised: April 1, 2007

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of steel cost adjustments.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)
Structural Steel
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), frames and grates, and other miscellaneous items will be subject to a steel cost adjustment when the pay item they are used in has a contract value of $10,000 or greater.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

(a) Evidence that increased or decreased steel costs have been passed on to the Contractor.

(b) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.

(c) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$SCA = Q \times D$

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in lb (kg)
D = price factor, in dollars per lb (kg)

$D = CBP_M - CBP_L$

Where: CBP_M = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the American Metal Market (AMM) for the day the steel is shipped from the mill. The indices will be converted from dollars per ton to dollars per lb (kg).

CBP_L = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the AMM for the day the contract is let. The indices will be converted from dollars per ton to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the CBP_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the CBP_L and CBP_M in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(CBP_L - CBP_M) \div CBP_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Attachment

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness)	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness)	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness)	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Mesh Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 – 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 – 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 – 15.2 m)	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 – 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 – 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 – 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 – 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)

Return With Bid

ILLINOIS DEPARTMENT OF TRANSPORTATION

OPTION FOR STEEL COST ADJUSTMENT

The bidder shall submit this completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of steel cost adjustments. After award, this form, when submitted shall become part of the contract.

Contract No.: _____

Company Name: _____

Contractor's Option:

Is your company opting to include this special provision as part of the contract plans?

Yes ☐ No ☐

Signature: _____ **Date:** _____

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.